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The JOURNAL of the Oklahoma State Medical Association

Volume 60 □ Number 7 □ July 1967



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1967

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■ Behavior Problems of the Minimally Brain-Injured Child
■ The Success of Late Peripheral Nerve Repair in the Upper Extremity
■ Immunologic Aspects of Pulmonary Emphysema



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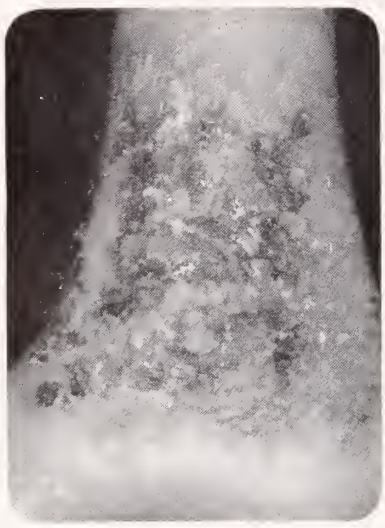
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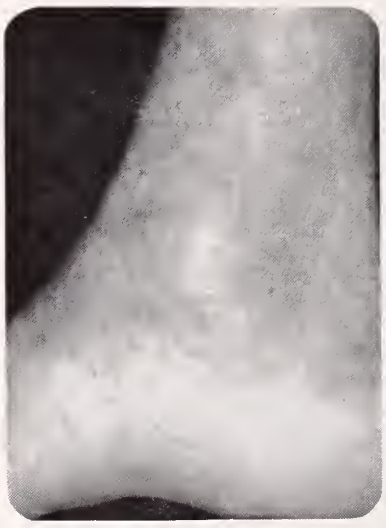
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References: 1. Abstracted from *Antibiotic Sensitivity of Staphylococci Studied from November 1962 through August 1965,* reported by Griffith, L.J., Staphylococcus Reference Laboratory, V.A. Hospital, Batavia, N.Y. 2. Data on file, Bristol Laboratories.

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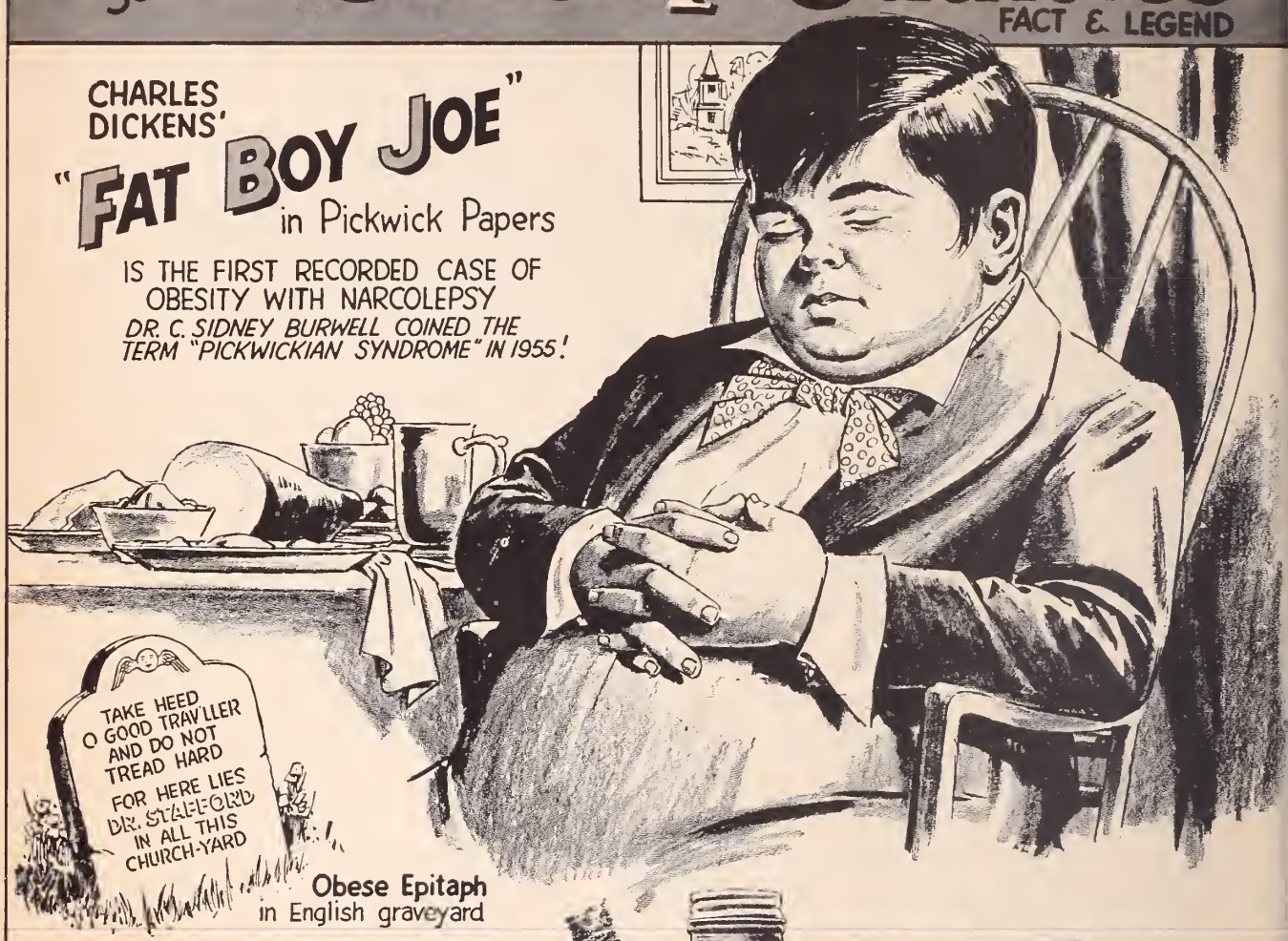
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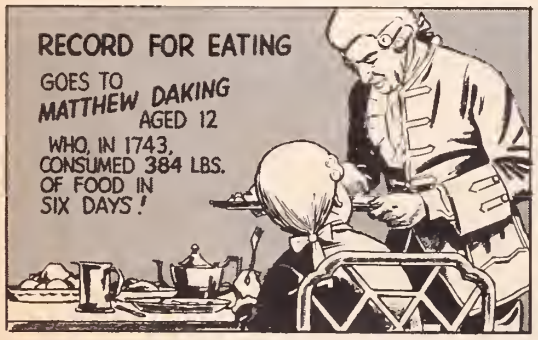
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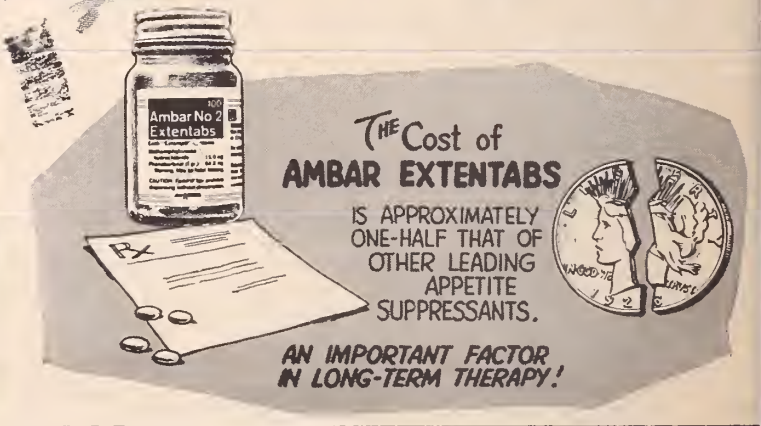
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McNeill, A. J.: Clin. Med. *8*:518 (Mar.) 1961.

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Captain Levy, Cause Celebre

CAPTAIN Howard B. Levy, Medical Corps, was sentenced to three years of hard labor along with loss of pay and allowances and dismissal from the Army by a general court martial at Fort Jackson, South Carolina, June 3rd, 1967. The charge was "wilful disobedience and disloyal statements." Captain Levy's main offense as outlined in the charges against him by the Army was his refusal to train Special Forces medical aid men bound for Vietnam in the diagnosis and treatment of skin diseases.

To thousands of doctors who have put in their time in the Armed Forces, the handling of this case must seem a bit perplexing. The oft repeated treatment for recalcitrant medical officers through the years has been assignment to some obscure dispensary, or an isolated post, or field duty, or any number of variations of this routine, until some solution of the problem is found. In the present instance, however, there appears to have been a direct confrontation between Captain Levy and his commanding officer, Colonel Henry F. Fancy, which resulted in the formal charges and resultant court martial. Some significant developments in the court martial proceedings are believed worthy of comment.

Captain Levy chose Charles Morgan, Jr., a civilian attorney, as his chief counsel. Mr. Morgan, among other duties, serves as Southern Regional Director of the American Civil Liberties Union. The first indication of truly unusual developments in the trial came one week after proceedings began on May 10th. On this particular day, after listening to counsel for some time, Colonel Earl V. Brown, the Army senior trial judge, directed that the Nuremberg War Crimes Trials ruling that "any soldier must disobey an order that he knows will result in a crime against humanity" was recognized in this trial but that the defense would have to prove its allegations of heinous acts by the Green Berets. Captain Levy had made statements accusing the Green Berets of being "killers of peasants, murderers of women and children." Mr. Morgan then attempted to prove that the Special Forces men fell in this category, but the ten officers constituting the court martial negated Mr. Morgan's presentation.

Mr. Morgan then introduced medical ethics as a defense, bringing in Captain Levy's remark that medicine was being prostituted by the Green Beret medics because they used it as a "handmaiden of politics" to convert Vietnamese peasants to the local political cause. It was during this period of the trial that some rather prominent doctors testified in Captain Levy's behalf regarding medical ethics. The court's analysis apparently indicated that whatever use was made of medical knowledge in Vietnam by the Green Berets, the ultimate result was for the betterment of the populace.

The most intriguing portion of the trial then developed, namely the interpretation of the application of the Bill of Rights to servicemen. A government witness had testified that Captain Levy had compared President Johnson with Adolf Hitler, and the Special Forces troops in Vietnam with Nazi Germany's Storm Troopers, resulting in a charge punishable under Article 88 of the Uniform Code of Military Justice —"contempt toward officials." But according to Colonel Brown, in his instructions to the court, it is permissible for an officer to "disagree with foreign policy as strongly as he wants and he may express opinion privately and informally on all political subjects and candidates and in strong and provocative words." It is believed that this particular interpretation will come up many times in future proceedings, although it predicated no final consideration in this case.

These significant developments in a military court martial, by chance, involved a medical officer, Captain Howard Brett Levy, age 30. The court deliberated only two hours and twenty minutes and brought in a verdict of guilty against Captain Levy not only that he "wilfully and defiantly disobeyed a law-

ful order," but also that he was guilty of the other contiguous charges.

The actual trial ended in a farcical situation when Colonel Chester H. Davis, executive officer of the base hospital, elected to put handcuffs on Captain Levy and forcefully remove him from the trial room to a waiting military vehicle to be driven to the stockade. This was done in spite of vigorous protestations by Levy and his counsel.

It is to be noted that the base commander, Major General Gines Peres, is empowered to reduce or suspend sentence after review of the official transcript of the trial.

It will probably be several months before the official transcript of the trial is ready for General Peres' review. Meanwhile, the fate of the defendant is pushed into the background by discussion of the intriguing legal maneuvers in his behalf. Whatever its final disposition may be, it cannot be denied that the Levy case developed some truly pivotal decisions in military court martial procedure.—*Walter E. Brown, M.D.* □

In Appreciation

To All Members of the
Oklahoma State Medical Association

I would like to take this opportunity to express my sincere gratitude to each member of the Oklahoma State Medical Association for the wonderful support that you gave me in becoming Vice-President of the American Medical Association.

I especially want to thank the officers of the Association and all of the administrative staff for the hours of planning and work that they devoted to the campaign.

I believe that the most heart warming thing in the world is for an individual to have the united support of his colleagues in his State Association.

I regret that every member of the Oklahoma State Medical Association could not be in Atlantic City to enjoy the delightful reception that you sponsored. It was indeed a gala occasion.

I wish to assure you that I will do everything within my power to reflect credit on our profession, our organization, and our State. I will spend all the time and energy that I possess to further our objectives and our ideals. I will do all that I possibly can to promote good medical care and protect our freedoms.

I will call on you for advice and assistance. In turn I will respond to any request that any of you may make.

Again, let me express my sincere thanks to each and everyone of you.

Sincerely,
MALCOLM E. PHLEPS, M.D.

What They Are Thinking

(Reprinted from The Journal of the Oklahoma State Medical Association, April, 1945.)

THE FOLLOWING comment, from a young Oklahoma City doctor, now overseas, was inspired by a recent issue of the *Oklahoma State Medical Journal.*

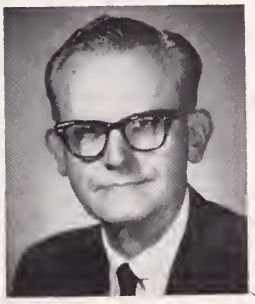
"It is a grand feeling to know that someone at home is working for good medicine . . . Many of us here hope that Socialized Medicine never comes, as we are fighting for something in principle that is so foreign to socialized medicine. I would hate to believe that my long stay on foreign soil has been in vain. I am proud to be a part of this great Army, and if I do say so, I believe I have been a good soldier, which I realize is necessary for efficiency. When this affair is over I would like to practice medicine my own way." □

Tolerance Please

(Reprinted from The Journal of the Oklahoma State Medical Association, August, 1947.)

THOSE WHO READ *The Journal* critically should remember that the Editorial Board and *The Journal* staff find it difficult to decide what should go in *The Journal* and what should be left out.

. . . Of modern interest is the fact that in June 1666, the *London Gazette* reluctantly announced an advertising supplement with this appealing explanatory note, "being daily prest to the publication of books, medicines, and other things not properly the business of a Paper of Intelligence." This was long before the fast-going days of modern communication, rapacious competition, fancy pharmaceuticals, vitamin fantasies, and the fallacious possibilities of "honest" advertising. What would the poor *London Gazette* do now? □



During the session of the legislature just closed, we were privileged to have a physician in attendance each day as "The Doctor of the Day." This project was so successful that we plan to continue it and even to expand it in the future. Briefly, it involved having a volunteer doctor in the capitol house each day to man the first-aid station and to care for emergency medical problems as they might arise among the legislators or capitol employees. Medically speaking, no huge result was accomplished by this. However, we demonstrated our concern for people's health to a most important group in Oklahoma—our legislators. I think that all the doctors who participated will agree that they were surprised and impressed by the cordialness of reception by their own and the other legislators. It made me feel that our image cannot be so terribly tarnished when these people were so obviously anxious to talk to us and get our help.

A number of organizations made this project possible and it would not have been successful without your help. Various medical and surgical equipment companies helped equip the first-aid room. Many companies and pharmacies helped with the furnishing of drug items. The Oklahoma State Nurses Association sent a nurse each day to assist the doctor. Our own volunteers were provided through the efforts of the Oklahoma Academy of General Practice and by OSMA recruitment.

In each case Dwight Whelan and the OSMA staff determined the representative and senator of whom the doctor was a constituent. They were written, advising them that "their doctor" would be at the capitol on a given day and they were urged to present him to their own colleagues. This worked out well and usually the doctor was invited to sit with the legislator on the floor of the chamber for as long as his medical duties would permit.

To those of you who participated this year, I want to say "thank you." You know that your donation of a day of your time was worthwhile, but I know you will appreciate a bit of thanks. To those of you who did not participate, I urge you to talk to a friend or colleague who did and see if you do not think it would be a worthwhile experience for you. If demand warrants we might assign two doctors each day next year—one for the house and one for the senate and let them spend half a day in each chamber. The observation of the legislative process in action is one of the side benefits which accrues to each doctor who goes there for a day and this method would increase his opportunity to learn more about just how our state laws are made.

Sincerely yours,

Maxwell A. Johnson MD

OSMA JOURNAL/scientific

Effects of Partial and Complete Biliary Tract Obstruction

ROGER D. WILLIAMS, M.D.

Experimental biliary tract obstruction with and without infection has helped to explain the relationship of duct changes, serum bilirubin and enzyme levels, and clinical course in patients.

ALTHOUGH THE effects of biliary tract obstruction may be obvious at times, diagnostic problems often arise either with partial, intermittent, or complete obstruction. Diagnosis may be confused either from complicating factors associated with simple obstruction or misinterpretation of the limited effects of obstruction. A recent experimental evaluation of the effects of partial and complete obstruction of the common bile duct has suggested an interrelationship of pressure, infection, and dilation to serum enzyme changes, changes in the liver, and clinical observations.

MATERIAL

During the past three years the effects of biliary obstruction have been extensively evaluated in dogs. Although others have suggested that the canine biliary tract is not the most satisfactory for comparison with the findings in patients, it has more in common than most other animals excepting the different relationship to the pancreas. Conjugated bilirubin is excreted by the kidney in large amounts; alkaline phosphatase is not. Cirrhosis does not readily follow biliary obstruction even when infection is present. In 60 disease-free dogs the biliary tract was found to be sterile in all except two, both having instrumentation of the common duct before cultures were taken. Like humans, the biliary tract readily clears its infection unless there is obstruction, probably due to the rate of flow, pH and bile constituents which discourage organism growth.

Long term partial or complete obstruction has been uncomplicated by infection unless organisms were added purposely. Partial, intermittent, and complete obstruction of the common duct were studied. Partial obstruction was produced by inserting a probe through the biliary ampulla, tying two silk sutures around the duct over the probe and removing the probe. A relatively standard degree of obstruction resulted in 20 dogs. Intermittent obstruction occurred with the passage of artificial gallstones through the common duct. These were placed in the gallbladder in 16 and in the common duct in six dogs. In the latter, the duct was slightly dilated as a result of previous cholecystectomy.[1] Complete obstruction by ligation and

From the Department of Surgery, University of Texas Medical Branch, Galveston, Texas.
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division of the common duct was effected in 12 dogs, half with the gallbladders removed.

The effects on the bile duct, liver, regurgitation of bilirubin and alkaline phosphatase, other serum enzymes and infection were determined in the presence of partial and complete obstruction. Alkaline phosphatase was determined by the method of Frajola, *et al.*[2] Bilirubin and several enzymes were determined by standard methods previously reported.[3] Infection, the addition of two cc. of culture broth containing three million *E. coli* obtained from a culture originating from canine endogenous intestinal organisms, was added to the normal, partially obstructed and obstructed biliary tract in 12 animals. Repeated exploration or autopsy findings confirmed the continued presence of infection and the gross changes in the biliary tract. Liver sections, taken by biopsy or at autopsy, were stained with hematoxylin and eosin and histochemically for alkaline phosphatase. The latter technique was not quantitative and results cannot be interpreted.

RESULTS

The biliary tract dilated apparently in direct proportion to the degree of obstruction. The results of uncomplicated partial and intermittent biliary tract obstruction were previously reported.[4] The more rapid rise of bilirubin than alkaline phosphatase and the slower return of the latter to normal has also been noted by others.[5, 6] The degree of dilatation after the passage of several stones through the common duct was usually quite small. It was variable and difficult to relate to the duration of obstruction since insufficient roentgenograms were obtained in animals to determine how long stones actually remained in the lower end of the common duct. In the absence of infection the ducts reached great size with partial or complete obstruction (figure 1). The normal 2.5 to 3.5 mm common duct was ten to 21 cm. in diameter after several weeks of uncomplicated obstruction. Once dilatation occurred, the ducts did not return to normal size.

The changes in the extrahepatic bile ducts, serum enzymes, and liver were similar in

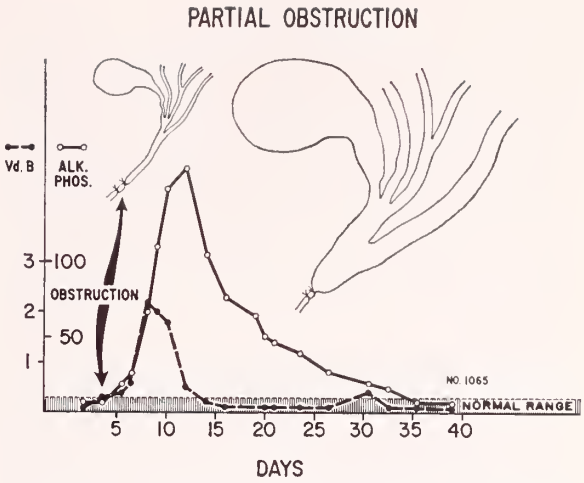


Figure 1. Partial obstruction produced by ligatures tied over a probe caused marked dilatation of the bile ducts as well as temporary increases in bilirubin (----) and alkaline phosphatase (——).

partial and complete extrahepatic biliary tract obstruction. All enzymes which showed a significant change rose to peak levels which varied considerably from one animal to another. The variation in serum alkaline phosphatase and bilirubin levels in dogs with complete obstruction is well known. The significant increase in serum glutamic oxaloacetic transaminase (SGOT) and serum glutamic pyruvic transaminase (SGPT) shown in figure 2, have been given less attention. These peak levels may occur early or several weeks after development of obstruction. Although a more rapid rise in bilirubin and alkaline phosphatase occurs in animals whose gallbladders had been removed prior to ligation of the common duct, no such effect was noted on SGOT or SGPT. Several other serum enzymes were measured but none showed a significant or consistent change with common duct obstruction.

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His medical affiliations include the American Surgical Association, the Society of University Surgeons, the Western Surgical Association and the American Association for Surgery of Trauma.

The role of infection was important in biliary tract obstruction. It did not alter serum alkaline phosphatase or bilirubin levels unless there was an increased degree of biliary obstruction. As shown in figure 3, the addition of organisms to the partially distended extrahepatic biliary system appears without effect. With obstruction the infection persisted and elevation of thymol plus microscopic evidences of liver cell damage and increased fibrosis suggested that with longer experiments significant biliary cirrhosis might develop. In some experiments with infection superimposed upon complete obstruction abscesses developed after several weeks. Infection more often decreased the serum level of this alkaline phosphatase when it was added to complete obstruction but had no effect with partial obstruction or no obstruction, as shown in figure 4.

The effects of infection are best summarized in figures 5a and 5b. If infection was introduced into the gallbladder there was no effect except slight thickening of the gallbladder and bile ducts. When "stones" were subsequently inserted into the gallbladder they passed with no appreciable dilation of the biliary tract. Later, the common duct was partially occluded by ligatures. Apparently total occlusion occurred for several days as evidenced by the very sharp rise in bilirubin and the high alkaline phosphatase, both returning gradually to normal. Despite

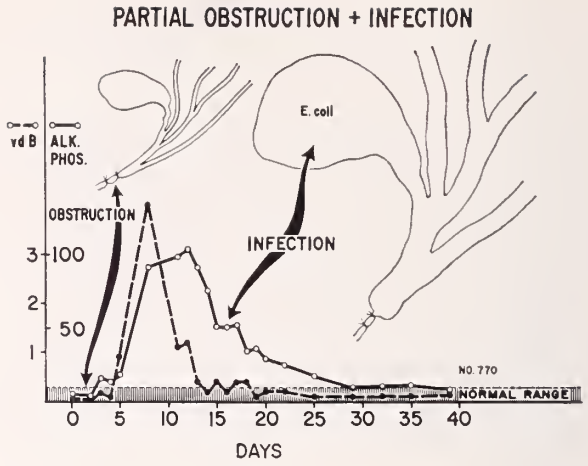
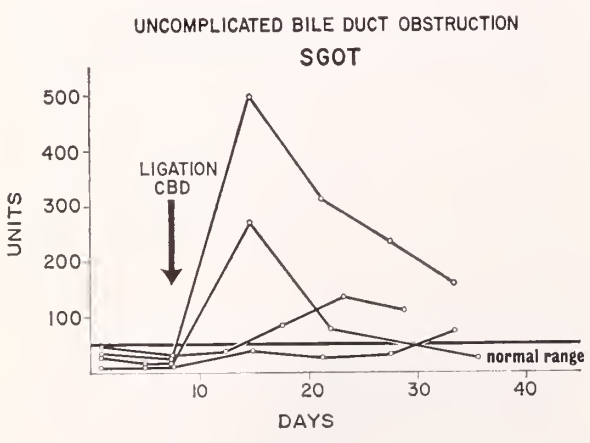


Figure 3. The addition of bacteria to the partially obstructed biliary tract caused no prolongation of obstruction as shown by the progressive return of alkaline phosphatase and bilirubin to normal.

obstruction, the infected, somewhat thickened bile ducts did not significantly dilate.

DISCUSSION

The effects of biliary obstruction are of clinical significance. Although it has been suggested that serum enzyme determinations and bilirubin are the most important laboratory tests in the presence of jaundice,[7,8] the significant elevations of SGOT and SGPT which occur with uncomplicated biliary tract obstruction limit their value. The peak levels in all dogs were similar to those seen in patients with cirrhosis and mild hepatitis. Since these enzymes also increase with par-



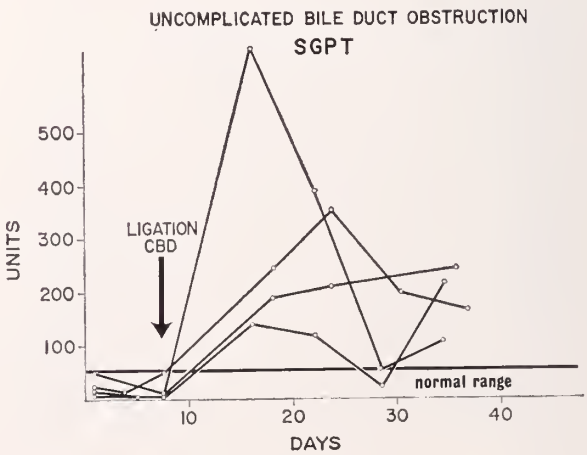


Figure 2. Note that both SGOT (2a) and SGPT (2b) increased to levels seen with non-surgical jaundice after uncomplicated bile duct obstruction.

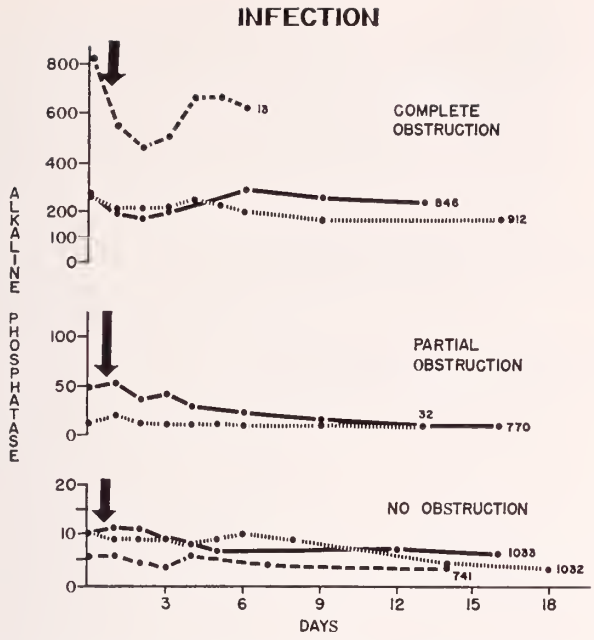


Figure 4. The addition of *E. coli* shown by the arrows caused no significant change in alkaline phosphatase. Infection persisted in the presence of obstruction.

tial obstruction, reliance upon them to differentiate mild hepatitis, cirrhosis, partial obstruction and drug induced jaundice will be disappointing.

Alkaline phosphatase appears to have a more predictable course with biliary obstruction. Much attention has been given to this enzyme and it is apparent that it is both regurgitated and produced in the liver.[5, 9] Current experiments suggest that the elevation of bilirubin and alkaline phosphatase in the serum are related to pressure in the common bile duct. The slow fall in serum alkaline phosphatase shown in figure 1 can be closely related to a gradual return of biliary pressure to pre-obstruction levels. The addition of infection as shown in figure 4 should cause no significant further rise in alkaline phosphatase. Organisms have been added to the biliary tract with complete obstruction and serum alkaline phosphatase shows either a slight fall or no change. Unless infection increases the degree of obstruction, it has no effect on serum bilirubin or alkaline phosphatase levels. This finding has clinical importance since jaundice may be ascribed to cholangitis when in reality a significant degree of obstruction exists.

Infection in the biliary tract does have two major effects. If it persists in the presence of obstruction, there is a greater degree of liver parenchymal damage. Although true biliary cirrhosis was not noted in the experiments reported herein, there was more fibrosis and cell damage in infected animals compared with those without infection but obstruction of a similar degree and time. In the absence of infection, complete or partial obstruction for ten to 12 weeks caused no noticeable liver cell damage. If infection was present before the development of obstruction, the biliary tract did not dilate as much and the common bile duct was not significantly increased in size. The wall of the duct was usually thickened. Therefore, the finding of a common duct of normal size in a patient does not preclude obstruction if the duct is thickened.

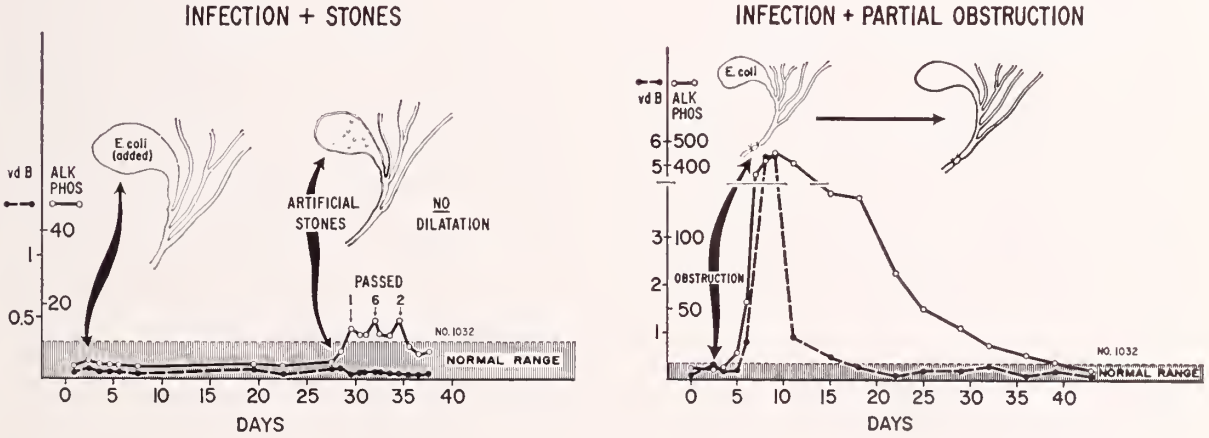


Figure 5. The addition of infection prior to insertion and passage of "stones" (5a) and before partial obstruction of the duct (5b) caused elevations of bilirubin and alkaline phosphatase; however, the common bile duct became thickened but not dilated.

In the absence of infection, the common duct dilated with obstruction in relation to the degree and duration of obstruction. Intermittent partial obstruction due to "stones" caused little change. Complete obstruction produced common and hepatic ducts of tremendous size. Once these ducts were enlarged, removal of the obstruction did not alter their size. Therefore, a dilated common bile duct signifies that obstruction has been present but may not necessarily be present at the time of observation.

An interrelationship of ductal dilatation and "stones" which was noted in the animal experiments may explain certain clinical aspects of choledocholithiasis. Small stones placed in the gallbladder usually enter the common duct and always pass the ampulla. They were more often temporarily delayed and produced a mild degree of obstruction. The common duct dilated slightly after their passage. Serum bilirubin and alkaline phosphatase increased to variable degrees. If somewhat larger stones were placed in a previously dilated ductal system they would not pass. Jaundice was variable; an elevated, fluctuating alkaline phosphatase was noted. Occasionally jaundice was absent. Stones have been noted in the common duct of many patients in the absence of jaundice and less often with a normal alkaline phosphatase. Their relationship to the size of the ductal system is too often not recorded.

SUMMARY

The effects of intermittent, partial and complete biliary tract obstruction have been evaluated in dogs, and the findings related to clinical observations. Obstruction of the common bile duct was produced by the passage of artificial stones (intermittent), incomplete ligature occlusion (partial) and complete ligation. Uncomplicated biliary tract obstruction produced elevations of the enzymes, SGOT and SGPT, for several weeks which were as high as have been reported with non-surgical types of jaundice in patients. Evidence of liver damage was otherwise not noted unless obstruction was complicated by infection.

The degree of dilatation of the extrahepatic bile ducts was related to biliary pressure and the degree and duration of obstruction. Dilatation permitted stones in the common duct which were too large to pass the ampulla. Variable degrees of hyper-alkaline-phosphatemia and icterus ensued. The obstructed major bile ducts reached great size in the absence of infection. Once dilated they remained so even though the obstruction was relieved. The addition of infecting organisms to the obstructed biliary tract produced no further increase in serum bilirubin or alkaline phosphatase unless it increased the obstruction. Infection added prior to obstruction of the common duct caused thickening which prevented significant bile duct dilatation. These findings have been related to those presented by patients with partial and complete biliary tract obstruction. □

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Behavior Problems of the Minimally Brain-Injured Child

WES WHITTLESEY, M.D.
RONALD O. McAFEE, Ph.D.

The child with school difficulties is a common problem. Many of these children will show some evidence of minimal brain injury. The physician can help these children by identifying and counseling them.

CHILDHOOD behavior problems have attracted increasing attention over the past ten years. In this group of disorders, physicians and psychologists have distinguished a group of children who seem to have neurological deficits. These children show evidence of a mild degree of brain injury.

Such children have been identified by a variety of names, including the minimally brain-damaged child, the perceptually handicapped, the child with minimal cerebral palsy, and the syndrome of minimal cerebral dysfunction.[13]

This syndrome includes a large portion of the children with school problems, learning difficulties, dyslexia, hyperactivity, and similar difficulties. The child with minimal brain damage is usually defined as a child who has perceptual or neurological handicap without cerebral palsy or significant mental retardation.

Such a child is difficult to diagnose and evaluate. Oklahoma now has 19 child guidance centers serving 38 counties, which can help physicians with such problems. These centers provide services for children with all types of developmental problems, including emotional, behavioral, and social difficulties as well as mental retardation.

INCIDENCE

In the neonatal period, Knobloch and Pasamanick[12] found signs of minimal brain damage in ten per cent of the infants studied. They estimated that 40 to 50 per cent of these infants later developed behavior disorders.

Richardson and Normanly reported 294 Oklahoma school children who were referred because of school failure or possible mental retardation.[17] The authors defined these children as "pseudoretarded." Many of the children had dyslexia, speech disorders, other language problems, the hyperkinetic syndrome, or evident sensory deficits. This group of patients comprised nine per cent of the total pediatric clinic population during the study period.

Mykelbust reported that five per cent of a school population had learning disabilities. Most of his children had objective evidence of organic brain damage.[15] In other school surveys, about 12 per cent of the white children are severely retarded in reading.[7] Doyle estimated that minimally brain-damaged children comprise five per cent of the total elementary school population[5]

A review of Oklahoma school children estimated that 14 per cent, or 72,278 children,

are handicapped by emotional disturbances, mental retardation, physical impairments, or speech defects. Of all the school children, 6.4 per cent showed symptoms of minimal brain damage.[14]

In general, between five and ten per cent of a random school population will show evidence of a specific learning defect or other neurological handicaps. Perhaps half of this group will have enough signs and symptoms to be classified as minimally brain damaged.

PATHOGENESIS

"The term . . . 'minimally brain-damaged,' as used currently, is in fact merely a label for certain kinds of aberrant behavior."[16] Many authors[3, 19] have observed that the hyperactivity, short attention span, and related findings are not "caused by" brain damage. Rather, the injury seems to be at the higher levels of perception, organization, and integration. Cerebral injury apparently damages these functions. This injury creates a primary disorganization which then leads to atypical behavior patterns. Thus, these patterns are developmental products of the primary lesion.[3]

This behavioral-emotional aspect ultimately can become the child's main problem. Work described a teenage girl, with known brain damage, who had such a problem. He noted that "the child's problems were so diffuse that they no longer related to her educational lags nor to any current difficulty in perception, but rather to her general relationship with society."[19]

DIAGNOSTIC EXAMINATION

The following is not a substitute for the usual pediatric examination. It is a listing of some specific points that have been found to be significant in children with minimal brain damage and it assumes that the physician already has ruled out other problems such as gross mental retardation, obvious hearing and visual defects, etc.

A. *History*: The most common symptoms are hyperactivity, poor attention span, lack of self-control, and some intellectual deficit. Instead of hyperactivity, the child occasionally may show negative, withdrawn activity. The attention span may be short, easily distracted, or simply unpredictable. The child may show poor self-control by temper tantrums, impulsiveness, restlessness, or a poor response to discipline. The child's mental deficits may include speech and learning difficulties or delayed developmental milestones. The child often has a history of clumsiness and poor coordination. The parents may have suspected hearing or visual defects and had the child examined for these.

In addition, some investigators have found the following items valuable, although their significance has not been determined definitely: Unpredictable show of affection, variable behavior, lack of popularity with peers, constant demands for money, inability to follow directions, constant teasing, destructiveness, or persistent lying.[18]

These children present the general history and appearance of a relative immaturity for their ages. This tends to persist, so that as adolescents

> ". . . they tend to be disciplinary problems, being repetitively defiant and unmanageable; they have little capacity for appraising situations except in a stereotyped fashion; impulsivity and explosive behavior are the rule . . . Their expressed plans for the future are unrealistic and poorly conceived. Paranoid ideation is frequently used to explain their interpersonal difficulties."[1]

As an adult, the patient "uses poor judgment, is shallow, has little capacity for interpersonal relationship, for realistic planning, or tolerance for frustration."

> ". . . salient characteristics at any age are immaturity, poor interpersonal relationships, impulsivity, difficulty with change or the unstructured, and low frustration or stress tolerance which is manifest in incongruous worries, temper tantrums, rages, panics, or major catastrophic reactions often indistinguishable from schizophrenic episodes."[1]

The child is usually referred because of problems in school. These problems rarely have their genesis in the current grade. The parents should be asked about the child's first school or day care, then about each subsequent year of schooling. Valuable infor-

mation includes the child's previous grades and school performance, behavior, relations with his peers and teachers, and previous performance in any problem area.

The past history should cover in detail the pregnancy, labor, delivery, previous hospitalizations, severe infections, high fevers, drug reactions, and history of seizures. Items which correlate well with brain injury include: Maternal toxemia, a mother below 16 or over 40, an elderly primagravida, prematurity (or low birth weight), a precipitous or prolonged labor, bleeding during the pregnancy, and maternal infections. Often valuable information is obtained through such questions as: Did the child cry immediately after birth? Did the mother see the child at birth? Was he normal in the neonatal period? Did he have problems with feeding while in the hospital?

Often the child has difficulty in his first months of life. He may show fretfulness, sleep disturbances, feeding difficulties, increased crying, or simply apathy. The hyperactivity and short attention span do not usually become evident until after he starts walking.

B. *Physical and Neurological*: The physical examination should include screening for visual and auditory defects. Rarely does the child have a gross physical defect.

"As usually performed, the conventional neurological examination is reported as 'noncontributory' in the type of child under consideration. The physician has his mind set on clear unequivocal signs and is not sensitive to the value of 'equivocal' signs."[4]

The examination may begin by observing his coordinational abilities, such as gait, gross motor function, awkwardness, clumsiness, and fine motor skills. The last may be observed as the child dresses himself, buttons his shirt, and ties his shoes.

The following defects were found at least twice as often in minimally damaged children as in controls: Visual defect, dysfunction of extraocular muscles, nystagmus, fine tremor of fingers, left-right confusion, athetoid movements, speech defect, hyperactivity, tic, grimacing, and pupil inequality.[11] With this in mind, the patient should be examined as follows:

1. *CEREBRAL*: Observe the child's speech, articulation, sensorium, right-left discrimination, and estimate the general level of functioning.

2. *CEREBELLAR*: The child may have difficulty in standing on one foot, hopping, catching and throwing a ball, or rapid alternating movements. He should be observed for heel walk, toe walk, and tandem gait. One should test for tremors, coordination on the heel-to-shin and finger-nose tests (the latter with eyes open and closed). Later the child should be tested for finger-to-thumb opposition, each hand separately and then both together. When the Romberg test is performed, observe the fingers for choreiform movements. During these tests, the child may make "associated movements." These are involuntary, often unconscious movements of parts of the body other than those directly involved in the test. For instance, in the finger-thumb opposition, he may move the fingers of the opposite hand.

3. *CRANIAL NERVES*: All nerves should be tested, but the child should be observed particularly for abnormal tongue movements, nystagmus, visual acuity, pupillary eye reflex, pupillary equality, and strabismus.

4. *DEEP TENDON REFLEXES*: Observe for briskness, asymmetry, and Babinski's reflex.

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A 1964 graduate of the University of Texas, Ronald O. McAfee, Ph.D., is program director of the Community Guidance Services, Division of Maternal and Child Health of the State Department of Health, Oklahoma City.

Doctor McAfee is a member of the American Psychological Association, the Southwestern Psychological Association and the Oklahoma Public Health Association.

5. *SENSORY*: The child should be tested for toe position sense, two-point discrimination, and two-point extinction. (When simultaneously stimulated at two points, e.g. shoulder and wrist, the child perceives only one stimulus.) Some physicians have observed graphesthesia, finger agnosia, and defects in stereognosis.

6. *MOTOR*: Observe the child for gross asymmetry, muscle wasting, paralysis, and increased or decreased muscle tone.

PSYCHOLOGICAL EVALUATION

The psychological evaluation offers a unique contribution to the determination of minimal cerebral involvement. As delineated above, minimally brain-damaged children may manifest deficiencies in certain perceptual, behavioral, and coordinational areas; psychological tests provide insight into a person's assets and deficiencies in these areas. On the basis of the child's performance on certain psychological tests, the psychologist is able to hypothesize that this particular child has problem areas closely resembling those of children diagnosed as minimally brain-damaged.

Psychologists have learned that certain psychological tests are particularly sensitive to the problem areas manifest by minimally brain damaged children. Several of these tests will be discussed briefly in order to provide a general overview as to how the psychologist hypothesizes the presence of minimal cerebral involvement.

The Wechsler Intelligence Scale for Children is one of the most useful tests for determining the presence or absence of minimal cerebral involvement. The WISC is composed of ten subtests measuring skills, such as abstract reasoning, general comprehension or judgment, eye-hand coordination, vocabulary, general information, etc. Specific scores are earned on each of ten subtests. Since a child with minimal cerebral involvement ordinarily has difficulty in the areas of abstract reasoning, visual-motor coordination, verbal expressions, and attention span, he should make low scores on subtests measuring these particular traits. If the subtests measuring these particular capacities fall significantly below his other subtest scores, the psychologist is alerted to the possibility of minimal cerebral involvement.

The difference between a person's performance I.Q. and his verbal I.Q. is another feature of the WISC which is useful for determining organic involvement. The ten subtests on the WISC are divided into two sections—verbal and performance. When the verbal I.Q. is 15 to 25 points above the performance I.Q., the psychologist is alerted to the possibility of cerebral involvement. Minimally brain-damaged children whose problems are manifest primarily in verbal expressions may have the opposite pattern, i.e., a high performance I.Q. and a low verbal one. It should be pointed out that factors other than minimal brain damage also influence the WISC to raise and lower certain subtests. An experienced psychologist is required to interpret the subtest scatter appropriately.

Another test frequently used by psychologists to determine minimal cerebral involvement is the Bender Visual Motor Gestalt test. This test consists of a series of nine designs which the subject is asked to sketch with no tools other than pencil and paper. Ordinarily, a child with minimal cerebral involvement will have a great deal of difficulty in accurately reproducing the designs. Frequently, he alters the designs in some way, such as supernumerary angles, rotation of the designs, angulation distortions, failure to reproduce the general Gestalt of the design and other inaccuracies.

The WISC and the Bender Gestalt are probably the two most frequently used tests for determining organic involvement. Other tests are also used, such as the Frostig Developmental Test of Visual Perception, the Draw-a-Person, the Khan Test of Symbol Arrangement, Weigl-Goldstein-Scheerer series, Rorschach, etc. In general, these tests have the common feature of attempting to measure some aspect of the person's behavior which may be distorted by minimal brain damage.

In summary, the psychologist is able to screen out certain children who are suspected of minimal cerebral involvement because their performance on certain psychological tests indicates deficiencies in the areas most

likely to be manifest in those children characteristically described as minimally brain-damaged. The psychological evaluation, when used in conjunction with the neurological and pediatric examinations, provides a very necessary source of information for screening out youngsters who should be considered for a perceptual training class.

CASE REPORT

The following report illustrates a typical child with minimal brain damage. It also shows how the local guidance center may help such children:

Karen, a seven-year-old white girl, was referred to the guidance center by her school teacher because of "poor school adjustment." She was repeating the first grade. She refused to write, would not color, would not do her classwork unless continuously supervised, climbed on top of her desk, and seemed unable to sit still. The parents observed that the child was uncoordinated and sometimes clumsy.

Review of the family history showed no evident emotional problems or serious conflicts. Karen's past medical history and developmental history were normal.

The psychologist had some difficulty in testing the patient. She was hyperactive, silly, immature, impulsive, and unable to concentrate. On the Stanford-Binet, she earned an I.Q. of 93. A Bender-Gestalt was given. Karen's designs were strongly suggestive of brain damage. Her drawings were extremely poor, far below her chronological age, and showed many rotations, reversals, and perseverations.

The patient was discussed at a guidance center staff conference, which included pediatric and psychiatric consultants. Because of the difficulty in management and the unusual nature of the case, the staff recommended that she be referred to the Child Study Center, University of Oklahoma Medical Center.

At the Child Study Center, her history was unchanged. The physical examination was normal. The neurological examination showed hyperactivity and impulsiveness. She had a pronounced inability to perform rapid alternating movements. Her position sense was poor. Otherwise, the routine neurological examination was normal. She performed skilled acts without difficulty.

When examined further, she showed deficits in extinction testing, stereognosis, graphesthesia, and finger sense (identifying a finger when it is touched). She read poorly for the examiner and reversed words and numbers.

Psychological testing was done. On the WISC, she attained a verbal I.Q. of 97 and a performance I.Q. of 93. On many of the subtests she scored above average. However, her total score was depressed by poor performance on a few subtests, such as a coding score of three (ten being normal). The Frostig test showed poor performance in all areas of perception, eye-motor coordination, and figure-ground identification.

The final diagnosis was, "Minimal cerebral dysfunction characterized by extremely short attention span, hyperactivity, and a severe perceptual defect." She was started on amphetamine to reduce her hyperactivity. After a good response was obtained, she was accepted in a special class at the Study Center for children with perceptual difficulties.

THE GUIDANCE CENTER PROGRAM

At present, there are 19 non-profit child guidance centers in Oklahoma. These centers are affiliated with county health departments, and operate under standards of the Oklahoma State Department of Health. Financial support is derived from the State Department of Health, the county health departments, and the local communities.

The typical center serves as an evaluation and counseling service for children, their parents, and the community. The staff is prepared to assist the private physician in evaluating children with problems in learning, development, or behavior. The staff of the child guidance centers may include psychologists, public health nurses, a social worker, and a speech and hearing specialist. Medical consultation is obtained from local pediatricians and psychiatrists.[6] These people provide a team approach to adjustment problems.

The main philosophy of the 19 community guidance centers in Oklahoma is early detection. This means developing current resources to meet the needs of the child. These

resources are readily accessible to the local physician, the family, and service agencies which permits detection of the child as early as possible for diagnostic evaluation and the initiation of remedial services where indicated.

Because of the philosophy of early detection, the physician and the guidance center are the first professional resources to become aware of the child's minimal cerebral involvement. Parents and teachers may know that something is wrong with the child because he is so hyperactive and has problems with school work. The routine physical examination usually does not uncover the minimal cerebral involvement.

Physicians and schools refer approximately 65 per cent of the patients seen in the community guidance centers throughout the state. An additional 25 per cent are self referrals, but often a physician has told these parents about the community guidance center.

A school problem usually provides the motivating impetus for parents to bring their child to the doctor, who can use the guidance center as a resource. Since most of the minimal cerebrally involved children are having school problems, the guidance centers routinely administer some of the above mentioned psychological tests to determine whether a youngster falls within this category. If the staff's evaluation suggests that the child's problems are partly due to minimal cerebral involvement, then a recommendation is formulated concerning whether or not to refer the child for possible placement in a class for children with specific learning disabilities. If the problem is unusual or extremely difficult, the staff may recommend sending the child to the Child Study Center.

In addition to the role of ascertaining the presence of minimal cerebral involvement, the guidance centers serve the important function of counseling with children and their parents. Parents usually need assistance in learning to accept their child's problems. Often, parents develop misconceptions and erroneous beliefs about why their child is having difficulties in school. They blame themselves, his teachers, his pediatrician, or the child. The guidance center tries to work through these problems with all concerned in the hope that by understanding why the child reacts as he does, the people with whom he associates will be more tolerant and helpful of his actions and deficiencies.

The guidance center routinely sends an evaluation summary to the schools and the physician involved in a particular case. The staff cooperates with both the physician and the schools in working out the most appropriate referral source or technique of working with the youngster.

By early detection of minimal cerebral involvement in a child, the guidance center is able to help assuage the emotional turmoil generated by the repeated failures and frustrations he encounters in his school work and with his peers because of his neurological dysfunction.

If a child has a diagnostic or therapeutic problem that is beyond the resources of the local guidance center or community, he is referred to another resource. The guidance center may refer the child to the Child Study Center in Oklahoma City or the Tulsa Child Study Clinic for Physically and Mentally Handicapped Children at the Children's Medical Center. These two units are associated with the Child Guidance Center system. They function as specialized referral centers because of their highly trained personnel, their range of facilities, and their experience in working with such children. After the child is evaluated there, he is referred back to the local physician and guidance center for followup.

TREATMENT

Two modes of treatment have been used, symptomatic and therapeutic. The symptomatic approach attempts to reduce the hyperactivity and related symptoms. Amphetamine commonly relieves the hyperactivity.[4] Thioridazine (Mellaril)[4, 16] and chlorpromazine (Thorazine)[10] have been of benefit in those patients unaffected or adversely affected by amphetamine. Chlorpromazine may be of particular benefit in children with mental retardation, anxiety, or behavior problems other than hyperactivity.

The therapeutic approach attempts to help the child overcome or compensate for his

perceptual and motor difficulties. The drugs administered by and under the direction of the child's physician are individualized according to the needs of each child.

The child with perceptual-motor difficulties will benefit from training with three-dimensional objects, coordination exercises, and special physical training.[8] The easily distracted child is helped by having a quiet, plain, neutral classroom. The hyperactive child works better in a structured, directed environment with a one-to-one teacher relationship. The child with a speech or hearing problem is helped by specific speech therapy.

Often these children will improve when they receive such training for as little as one hour daily. The control they gain allows them to perform more satisfactorily in regular school classes. With this in mind, some of the guidance centers have established programs to provide training for these children. After the child is identified, diagnosed, and evaluated, his problem is discussed with the school. Through cooperation with the school, the child is released for a limited time each day. At the guidance center, he receives training directed toward his specific problem. Such training is not intended to be a substitute for his regular schooling.

At the school, he puts his training to use in developing specific skills, such as reading. The private physician, with assistance of the guidance center, has the responsibility for medical evaluation, followup, and drug regulation. The family is counseled about the child's problems and progress. This approach has proven successful in other states and in the parts of Oklahoma where it is currently in use.

SUMMARY

This report discusses the diagnosis and evaluation of the minimally brain-damaged child. It emphasizes the wide range of symptoms that are included in this syndrome. It discusses the statewide child guidance center system and how the local guidance center may be of help to the physician in working with these children.

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The Success of Late Peripheral Nerve Repair in the Upper Extremity

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AVERILL STOWELL, M.D.

Six cases of nerve repair done more than a year after injury are reported. A plea is made for exploration in cases of long term nerve injury.

REVIEW OF THE literature reveals numerous excellent summaries of the results of peripheral nerve repair. Reports of results of late repair where definitive therapy has been done a year or more after the injury are more difficult to find.

Textbooks generally discourage attempts at repair after two years. However, Bunnell[1] states, "Sensation returns after nerve repair, even though done six years after injury; but motor nerves should be repaired as early as possible because the steady progressing fibrous degeneration of the nerve and muscle will make it unfit for function if the nerve is repaired too late. Many good results are obtained by repairing the nerve a year after the accident. We should repair a motor nerve even up to two or three years, though two is usually considered the maximum time. If the muscle still reacts to the galvanic current, it will react to the repaired nerve. This is our best guide."

A recent case in which a nerve suture was done seven years after the injury in which the patient had a partial return of function prompted this report. We have been unable to find another report of a successful repair after this length of time.

A review of the records of the Muskogee, Oklahoma Veterans Hospital for the past 15 years reveals only two cases in which definitive nerve repair was done after a period of more than one year. We were able to gather four additional cases from the private neurosurgical practice of one of the authors (A. S.) from Hillcrest, St. John's and St. Frances Hospital in Tulsa, Oklahoma.

Probably the most complete study of peripheral nerve regeneration was sponsored by the Veterans Administration following World War II.[2] This report, edited by Woodhall and Beebe, gave a follow-up study reporting on 3,416 injured nerves with definitive operations.

Two hundred and eighty-six cases were sutured primarily or definitively more than 360 days after the injury. Among these cases, in the median nerve in the forearm an approximate 27 per cent recovery was obtained, in the ulnar nerve of the forearm approximately 29 per cent return was recorded. In the high median, 12 per cent, and in the high ulnar, 14 per cent was obtained.

This paper does not necessarily reflect the official policy or opinion of the Veterans Administration.

Presented at the Annual Meeting of the Southwestern Surgical Congress in Las Vegas, Nevada in May, 1966.

It is interesting to note that after 200 days in the median nerve sutures and 300 days in the ulnar nerve sutures the chances of recovery remained the same up to the 900 days which was the maximum time reported.

It has been reported that delay in the repair of a severed nerve results in shrinkage of the peripheral Schwann tubes and an increase in endoneural collagen so that ultimately the tubes become so small that although they do not hinder the outgrowth of axons they do prevent their attaining an adequate diameter and the degree of myelination requisite for satisfactory function.[3]

The motor end plates persist for some months but ultimately they disappear, and although regeneration is possible when reinnervation of a muscle occurs the new endplates are very inferior structures.[4]

There is atrophy and interstitial fibrosis of denervated muscle. Based on these features a critical delay table has been worked out as reported by Zachary and Holmes to give the longest interval between injury and operation compatible with useful recovery. This table showed that 18 months was the critical delay time in adults for median, ulnar or radial nerve injuries.[5]

These reports have not been consistent with our experience because although chances of recovery are considerably reduced after 18 months, our case reports show that recovery does occur after more than two years.

CASE REPORTS

A 52-year-old white man fell through a glass door on September 2, 1957, sustaining three lacerations of the right arm and forearm. No apparent nerve damage was noted at the initial repair. Two months after injury he was seen at the Ann Arbor, Michigan Veterans Hospital. There was marked paresis of flexion and extension in the right wrist and paresis of fingers in approximately all planes, most pronounced on the flexors of the thumb. There was an area of hypesthesia over the lateral three digits. He was given intensive physical therapy treatment and re-evaluated. It was noted that the degree of function of his fingers improved considerably, the main loss being the opponens function of the thumb. Electromyographic studies were done. The physiatrist stated, "It would appear from this examination that his median nerve has been severed or badly damaged at the level of the scar across the upper flexor forearm surface." It was felt that the patient was showing evidence of improvement although there was still pronounced hypesthesia of the area supplied by the median nerve. Two months later he sustained a severe burn of the right index finger. This was skin grafted and he was scheduled to return for further evaluation of the median nerve injury but failed to return and was lost to follow-up.

He was next seen at the Muskogee, Oklahoma Veterans Hospital in August, 1964. There was loss of the long flexor of the thumb and complete sensory loss in the distribution of the median nerve. He was seen by the neurosurgical consultant and the area was explored August 26, 1964. There was complete anatomic interruption of the nerve. The ends of the nerve were united after removal of the neuromas. It was noted that the distal portion of the nerve was not particularly atrophic even after the long period of time. Fourteen months following repair, the patient had regained almost complete return of motor function and the atrophy in his hand decreased with filling out of the muscles. He continued to have sensory loss over the distribution of the median nerve. Muscle and nerve function tests revealed

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good function of all muscles supplied by the median nerve with the exception of the flexor pollicus brevis which showed fair contraction.

The second patient, a 40-year-old white man, sustained an injury in 1946. Exploration and suture of the completely severed median nerve was done on September 10, 1958, 12 years after the original injury. This patient had only an approximate ten per cent recovery of motor function with slight return of sensory function with misdirection of sensory fibers. We do not feel that the repair was worthwhile for this result.

The third patient, a 40-year-old white man sustained a razor laceration of the mid-arm in January, 1958. He had complete ulnar and median nerve palsy. Suture of both nerves was done April 22, 1960, 27 months after injury. He showed approximately 60 per cent motor and 70 per cent sensory recovery when last seen in February, 1966.

The fourth patient, a 52-year-old white man was operated 33 months after a stab wound of the axilla. He had suture of the median nerve with approximately 45 per cent motor recovery and 65 per cent sensory recovery when re-examined ten years after the repair.

The fifth patient, a 31-year-old white lady, sustained a severance of median nerve two inches below the elbow. She had nerve repair 26 months after the injury with approximately 40 per cent motor recovery and 60 per cent sensory recovery.

The sixth patient, a 21-year-old white man, had repair of a severed ulnar nerve 19 months after the original injury. He was lost to follow-up eight months after the repair but when last seen he had minimal recovery and must be considered as an unsatisfactory result.

Therefore, we feel that the nerve repair was worthwhile in four of these six patients although it was done in the satisfactory cases from 26 months to seven years after the original injury.

DISCUSSION

As was pointed out in the results of the VA nerve injury study, nerve sutures done under 100 days, preferably between 30 and 50 days, give the best results.

Due to inability to determine the amount of degeneration present as the result of a nerve lesion,[6] we recommend that a minimum of 30 days should elapse prior to definitive suture of the nerve. At the time of the initial injury the nerve ends should be gently approximated by one or two stay sutures. Muscle tone should be preserved during the period of delay starting at a minimum of one week after the nerve injury. The use of electrical current, massage, and passive movement is stressed. This we feel gives the best results. However, this is not always possible since patients may not be seen until long periods after their injury.

In conclusion, we feel that peripheral nerve repair should be done on all cases of long term nerve injury in which any muscle reaction to galvanic current can be obtained although results will not be so good as in earlier sutures. □

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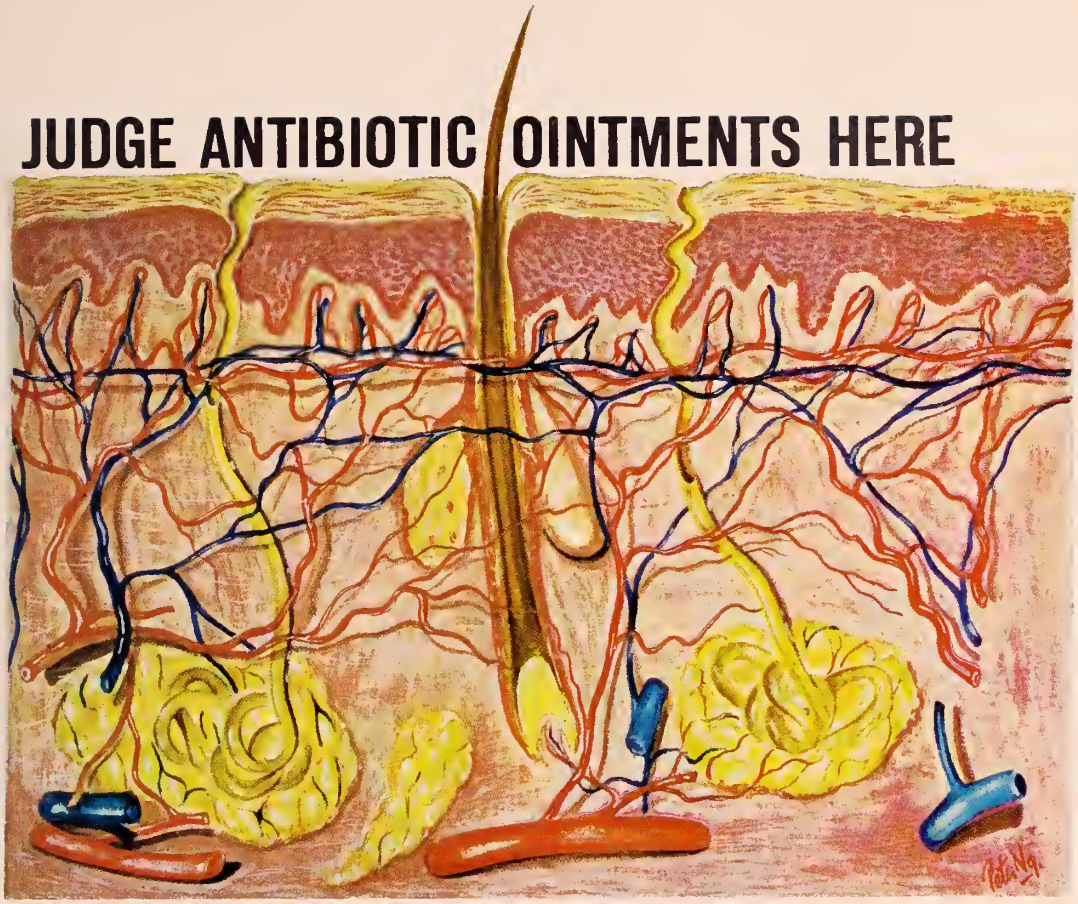
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4. The menopausal patient.

The woman who sees change of life as the end of useful life requires support from both family and family physician. Whether the psychological impact of menopause is directly related to hormonal changes, or merely coincidental, is debatable, but estrogenic therapy is frequently inadequate. Mellaril is a useful aid for these patients and, alone, or in combination with reduced estrogen dosage, will help ease the menopausal misery.



5. The previously hospitalized psychiatric patient.

Such a patient may still require the type of medication he has been accustomed to, but because he is no longer in a controlled setting the acceptable level of adverse reactions must be lower. In such circumstances Mellaril is perhaps the drug of choice.



6. The agitated geriatric.

Tranquilizer therapy in the elderly patient always involves special (or at least accentuated) problems: the possibility of drug-induced ataxia, hypotension or depression, for example, assumes an additional significance. These reactions have rarely been observed in geriatric patients treated with Mellaril.



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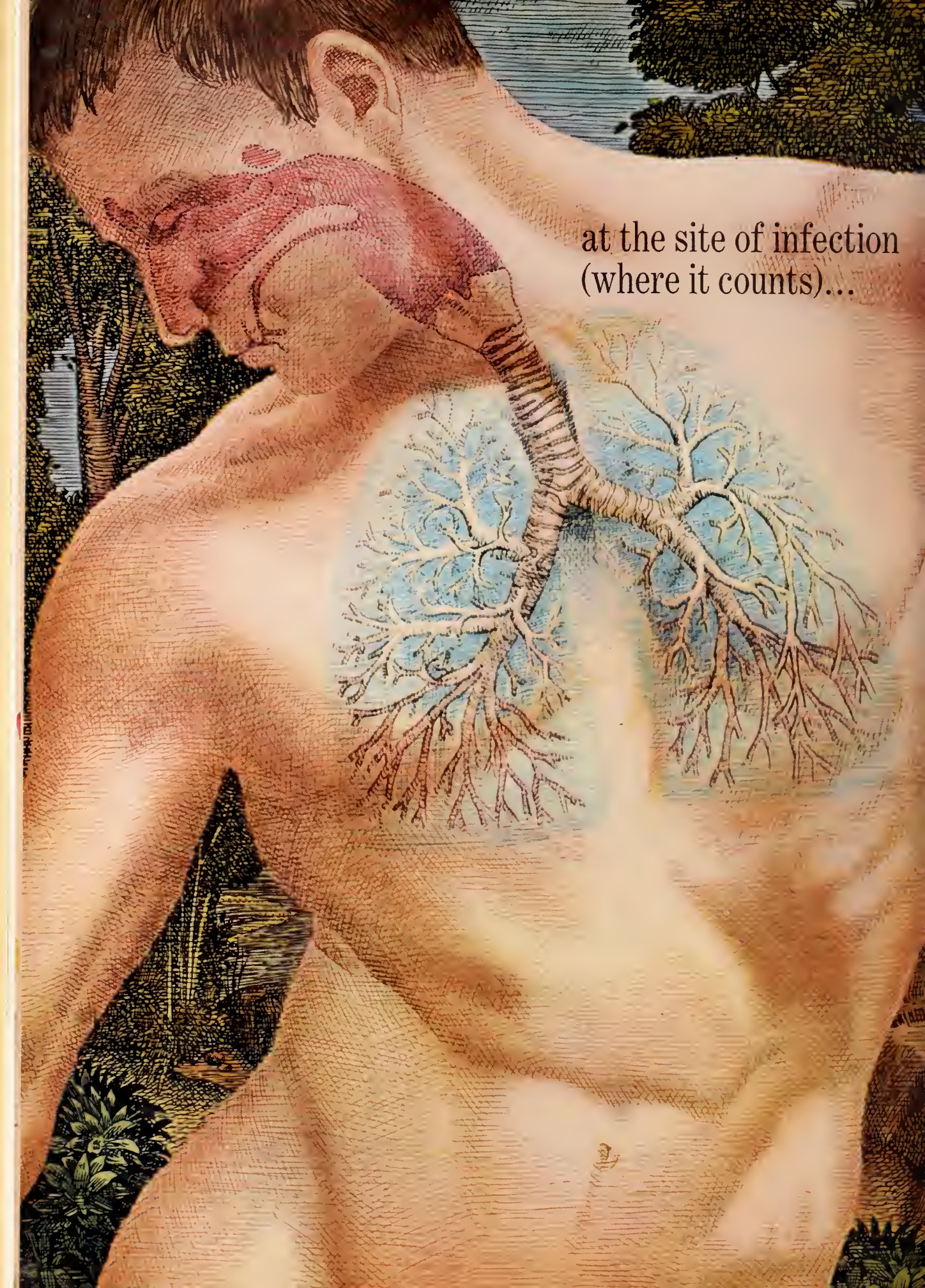
Dosage and Administration – In *women:* one 250-mg. oral tablet three times daily for ten days. A vaginal insert of 500 mg. is available for local therapy when desired. When used, one vaginal insert should be placed high in the vaginal vault each day for ten days; concurrently two oral tablets should be taken daily.
In *men* in whom trichomonads have been demonstrated: one 250-mg. oral tablet twice daily for ten days.

Contraindications – Pregnancy; disease of the central nervous system; evidence or history of blood dyscrasia.

Precaution—Complete blood cell counts should be made before, during and after therapy, especially if a second course is necessary.

Side Effects—Infrequent and minor side effects include nausea, metallic taste, furry tongue and headache. Other effects, all reported in an incidence of less than 1 per cent, are diarrhea, dizziness, vaginal dryness and burning, dry mouth, rash, urticaria, gastritis, drowsiness, insomnia, pruritus, sore tongue, darkened urine, anorexia, vomiting, epigastric distress, dysuria, depression, vertigo, incoordination, ataxia, abdominal cramping, constipation, stomatitis, numbness of an extremity, joint pains, confusion, irritability, weakness, flushing, cystitis, pelvic pressure, dyspareunia, fever, polyuria, incontinence, decreased libido, nasal congestion, proctitis and pyuria. Elimination of trichomonads may aggravate candidiasis.

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Ilosone has shown no cross-resistance with penicillin and may be effective against organisms that have become resistant to that agent. Despite its high antibacterial activity, Ilosone has demonstrated a low incidence of side reactions. Blood dyscrasias, ototoxicity, and tooth staining have not been observed. Infrequent cases of drug idiosyncrasy, manifested by a cholestatic jaundice, have occurred, but there have been no known definite residual effects.

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Indications: Ilosone is indicated in infections caused by microorganisms sensitive to its action (especially staphylococci, hemolytic streptococci, and pneumococci). The drug is therefore useful in a high proportion of bacterial diseases encountered in clinical practice and particularly in the treatment of bacterial infections of the upper and lower respiratory tract and soft tissues.

In the treatment of acute bacterial pharyngitis and tonsillitis, this antibiotic has promptly eradicated the bacteria (streptococci) and has produced a parallel prompt clinical improvement. There have been no group A beta-hemolytic streptococci resistant to this preparation. In beta-hemolytic streptococcus infections, treatment should be maintained for ten days to prevent the development of rheumatic fever or glomerulonephritis.

Erythromycin estolate has proved to be very effective in pneumococcus pneumonia and in acute bronchitis with pneumococci on culture. Bronchopneumonia and otitis media in children have responded well to its use.

The antibiotic has been used very successfully in staphylococcus infections. Good therapeutic results have been obtained in soft-tissue infections, abscesses, cellulitis, carbuncles, wound infections, and furunculosis.

In serious staphylococcus infections, erythromycin preparations should be used only in combination therapy with other antimicrobial agents. As is the case with any treatment regimen used in these severe conditions, surgical procedures should be performed when indicated, and large dosages of the antimicrobial agents should be employed. In this fashion, Ilosone has been effective in staphylococcus pneumonia, osteomyelitis, septicemia, empyema, and meningitis.

Multiple 500-mg. doses of the drug have also been useful in gonorrhea and syphilis. Since penicillin is the drug of choice for the treatment of syphilis and gonorrhea, erythromycin estolate should be employed for these infections only in patients with a history of penicillin allergy. Also, other infections due to susceptible bacteria in patients known to be hypersensitive to penicillin or other antibiotics may be considered for treatment with Ilosone.

Contraindications: Ilosone is contraindicated in patients with a known history of sensitivity to this drug and in those with preexisting liver disease or dysfunction.

Adverse Reactions: Data obtained from seven years' use of propionyl erythromycin ester and erythromycin estolate (Ilosone) indicate that hepatic dysfunction with or without clinical jaundice may occur during or following courses of therapy with the drug.

Changes in liver function tests in such cases have been indicative of intrahepatic cholestasis. The symptoms appear to be the result of a form of sensitization. The initial symptoms have developed in some cases after a few days of treatment but generally have followed one or two weeks of continuous therapy or several courses of the drug. Symptoms reappear promptly, usually within forty-eight hours, if the drug is readministered to sensitive patients. Eosinophilia was noted in peripheral blood counts. The findings readily subsided without apparent residual effects when treatment was discontinued. Recovery was delayed in one reported instance. The physician indicated in this case that either drug-induced jaundice or viral hepatitis may have been responsible for the findings.

In one clinical study involving ninety-three patients treated with the antibiotic, three cases of jaundice were observed and an additional eleven cases developed some changes in liver function tests. Three of the patients had abnormal liver function tests a second time on readministration of the drug.

Even though it is assumed that not all cases of jaundice have been reported, it seems clear that the number is small compared with the amount of drug that has been used. Reported cases have included persons in whom there had been administered other drugs known to be associated at times with hepatic side-effects and cases in which the presence of viral hepatitis or other disease may have been responsible for the findings. In some of the cases, associated gastro-intestinal symptoms simulated the colic of biliary tract disease. In other instances, clinical symptoms and results of liver function tests resembled findings in extrahepatic obstructive jaundice. It appears that the occurrence of jaundice after administration of Ilosone is infrequent, but further investigations are being made to estimate its incidence more accurately.

In those cases mentioned above in which jaundice appeared to be definitely related to use of the drug, laboratory findings were characterized by increased direct-reacting bilirubin, elevated alkaline phosphatase levels, negative or weakly positive cephalin flocculation and thymol turbidity tests, elevated serum glutamic oxalacetic transaminase levels, peripheral eosinophilia, and normal cholecystograms.

Individual idiosyncrasy seems evident since jaundice has not been reported in other patients taking prolonged courses of the medication. Patients with chronic infection have been given 1 to to 2 Gm. of the drug daily for periods of two to six months, and patients with rheumatic fever have taken prophylactic doses of 0.5 Gm. daily for two years without difficulty. In one group of 144 patients who received the drug daily for two years, no jaundice was noted. It was of interest that members of six of these patients' families, who were not taking the drug, had episodes of jaundice during the study period.

Transaminase and serum alkaline phosphatase levels were determined in a group of fifty-four adults and children who took 250 mg. of Ilosone daily for an average of sixteen months as rheumatic fever prophylaxis. The results were compared with those of a similar group of forty-four patients who received penicillin. There were no cases of jaundice in either group. Elevation of SGPT and serum alkaline phosphatase levels during the course of treatment was observed in one patient treated with Ilosone and in two patients treated with penicillin. Seven other patients in the group receiving Ilosone and four others in the penicillin group showed elevations in one of the tests at some time during administration of the drugs.

Very satisfactory therapeutic results, without toxicity, were reported in 102 pediatric patients who received short-term (ten-day) courses of Ilosone in the treatment of streptococcus infections. Results of liver function tests in these patients were comparable to those in a similar control group who had received penicillin.

Gastro-intestinal disturbances not associated with hepatic effects are observed in a small proportion of individuals as a result of a local stimulating effect of the medication on the alimentary tract; however, the normal intestinal gram-negative bacterial flora is not appreciably altered by erythromycin drugs.

Although allergic manifestations are uncommon with the use of erythromycin, there have been occasional reports of urticaria, skin eruptions, and, on rare occasions, anaphylaxis.

Administration and Dosage: Ilosone is administered orally.

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For infants and for children under twenty-five pounds of body weight, the usual dosage is 5 mg. per pound every six hours; for children twenty-five to fifty pounds, 125 mg. every six hours. (Tablets Ilosone Chewable should be chewed or crushed and swallowed with water.)

For adults and for children over fifty pounds, the usual dosage of Ilosone is 250 mg. every six hours.

For severe infections, these dosages may be doubled.

When larger doses are indicated, parenteral erythromycin therapy should be considered.

In the treatment of syphilis, the recommended total dosage is 20 to 30 Gm. given in divided doses for a period of ten to fifteen days. Close follow-up of the patient is necessary since erythromycin drugs have not had adequate evaluation in all stages of syphilis. Examinations of spinal fluid are recommended as part of the follow-up therapy.

For gonorrhea, 500 mg. four times a day for four days are recommended. In the treatment of gonorrhea, patients with a suspected lesion of syphilis should have a dark-field examination before receiving antibiotics, and monthly serologic tests should be made for a period of three months.

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Tablets Ilosone Chewable, N.F., 125 mg. (equivalent to base), in bottles of 50. [032767]

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Immunologic Aspects of Pulmonary Emphysema

RICHARD M. HYDE, Ph.D.

This paper deals with immunologic studies related to the possible autoimmune nature of emphysema.

THE ETIOLOGY of chronic obstructive pulmonary emphysema, (which, for purposes of brevity in this report, will be termed emphysema) remains obscure. There are, however, certain characteristics of the disease which must be taken into account when one attempts to delineate its etiologic and pathogenetic history. Emphysema occurs most often in males over 40 years of age. There is often a history of moderate to heavy cigarette smoking. There is usually no history of other bronchopulmonary disease, except chronic bronchitis or asthma. Sera of patients with emphysema often contain antibodies which react with extracts of human lung tissue. Although this last observation is not restricted to patients with emphysema, the presence of antibodies to "self" antigens does suggest that some defect in the immunologic mechanism may be involved in this disease.

Pulmonary lesions are commonly seen as one of the facets of several autoimmune diseases, *e.g.*, rheumatoid arthritis, polyarteritis nodosa, and systemic lupus erythematosus. Conditions which may possibly be classified as *primary* autoimmune lung disease include the Hamman-Rich syndrome, diffuse interstitial pulmonary fibrosis, and primary pulmonary hemosiderosis.[12] The suggestion that these last diseases might be the result of defects in the immune mechanisms of the affected individual is based primarily upon histopathologic evidence.

In 1944, Hamman and Rich[10] reported four cases of a unique syndrome in young adults. The disease was described as "an acute interstitial fibrosis of the lungs" which resulted in right heart failure and death in all cases within six months. Alveolar exudation and hyaline membrane formation, together with alveolar and bronchiolar necrosis were seen on histopathologic examination. There was also extensive fibrous proliferation and eosinophil infiltration into the interstitial tissue.

A similar but more protracted syndrome was described by Scadding[15] approximately 15 years later. This disease was described as a "chronic diffuse interstitial fibrosis of the lungs," which occurred in elderly patients and lasted several years. The cellular exudation and infiltration in these patients was characterized by the presence of monocytic and fibroblastic cellular elements. Corticosteroid therapy was found to be somewhat palliative. Scadding suggested that diffuse interstitial fibrosis of the lungs may be related to the collagen diseases, and discussed the possibility that autoimmunity might play a role in the pathogenesis of this syndrome. This suggestion is supported by the observation of elevated gamma globulin

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levels in patients with this type of fibrocystic pulmonary dysplasia.[1]

Idiopathic pulmonary hemosiderosis is a rare disease in which the patient has recurrent attacks of breathlessness with cyanosis, hemoptysis, and fever.[17] There is an anemia associated with this condition which is the result of recurrent pulmonary hemorrhages. Thickened fibrotic walls and numerous alveolar macrophages filled with hemosiderin are seen during pathologic examination. Adrenocortical steroids have been found beneficial in the treatment of this disease. The occurrence of this disease along with other conditions suspected of being autoimmune in nature, *e.g.*, rheumatoid arthritis[16] in the same patient strengthens the impression that this pulmonary dysplasia is also of autoimmune etiology.

Although anti-lung antibodies can be demonstrated in the sera of many humans with emphysema,[2, 4, 5, 7, 11] the inclusion of this malady in the category of autoimmune disease is speculative. It is not the purpose of this report to attempt to prove or disprove the possible autoimmune etiology of this disease, but merely to present evidence obtained in the past few years which bears on the contention that emphysema may perhaps be autoimmune in nature. Before discussing specific research efforts pertinent to this thesis, it might be appropriate to review briefly some aspects of current thinking about autoimmune diseases in general.

The function of the immune system is to recognize antigens and respond to them with the production of specifically reactive substances, either classical circulating antibodies, atopic antibodies of the reagin type, or sensitized lymphocytes. When an immune response is evoked by an invading microorganism, the outcome is usually protective in nature. However, in certain instances the production of antibodies may cause a disease rather than prevent one. The diseases (immunopathies) resulting from an immune response may be classified into three categories depending on the source of the antigen which precipitates them. *Heteroimmune* diseases are those in which the offending antigen comes from a source phylogenetically distant from the human. Most allergies fit into this category. A specific example of a heteroimmune disease would be serum sickness resulting from the injection of horse antitoxin. *Homoimmune* (or *isoimmune*) diseases are those which result from experience with an antigen found in some but not all humans. For example, transfusion reactions are immunopathies which are the result of antibody response to an antigen found on the erythrocytes of the donor and absent in the recipient. *Autoimmune* diseases are those in which the immune response is directed against a normal component of the body which is not normally antigenic in that individual. Thus, the ability of the host to synthesize antibodies becomes directed to a "self" antigen. The antigen involved may occur in the circulation or it may be inaccessible to antibody forming tissues in the normal individual; thus, the method of sensitization varies. Autoantibodies to inaccessible antigens, such as thyroglobulin, might be induced following injury to the appropriate tissue with subsequent release of the antigen. There has been speculation that sensitization to accessible antigens involves a somatic mutation of certain lymphoid cells, with a resultant acquisition of the ability to synthesize antibodies to self antigens.

Autoimmune diseases vary in the extent of tissue involvement. Thus, Hashimoto's thyroiditis is a localized autoimmune process, whereas lupus erythematosus is a systemic immunopathy. In general, the structural and functional damage seen in an autoimmune disease is correlated with the tissue distribution of the antigen. The characteristics of autoimmune diseases have been discussed by Mackay and Burnet.[12] Several of these characteristics are presented in table 1.

Before the etiology of a disease can be established, there are certain criteria which must be met. Koch supplied a set of postulates to use in the establishment of the etiology of an infectious disease. Witebsky[18] has performed a similar service for the investigator attempting to establish the etiology of autoimmune diseases. Witebsky's postulates are as follows:

1. Antibodies, either humoral or cell bound, must be demonstrated in the serum of patients suffering from the disease.

2. The antigen against which the antibody is directed must be characterized.

3. It should be possible to produce antibodies against a similar antigen isolated from experimental animals and injected back into them or into members of the same species.

4. Pathological changes that are similar or identical to those seen in the human disease should occur in the sensitized animal described in (3) above.

Let us now review some of the information available on emphysema and see if these postulates have been fulfilled.

Table 1

CHARACTERISTICS OF AUTOIMMUNE DISEASES

1. Elevated levels of alpha and gamma globulins in plasma.
2. Decreased amount of complement in the serum.
3. Elevated sedimentation rate.
4. Positive C-reactive protein and thymol flocculation tests.
5. Demonstrable antibody which reacts *in vitro* with a "self" antigen (autoantibody).
6. Deposition of denatured gamma globulin or its derivatives, *e.g.*, amyloid, at certain sites in the body.
7. Lymphocyte and plasma cell accumulation in damaged tissues.
8. Therapeutic benefit from drugs known to suppress the immune response, *e.g.*, corticosteroids, 6 mercaptopurine.

In 1961 Hennes, *et al.*[11] reported antilung antibodies in the sera of patients with tuberculosis or emphysema. They were able to demonstrate the antibody by agglutination of latex particles sensitized with lung homogenate preparations. Sera from 57 of 80 tuberculous patients and 15 of 32 patients with emphysema were positive in their tests, whereas only two of 60 sera from control individuals demonstrated comparable activity. Absorption of reactive sera with a tryptic digest of lung homogenate removed the anti-lung antibodies in the emphysema group, but had no effect on the reactivity of sera from tuberculous patients, suggesting that the latex agglutination test was detecting different antibodies in the sera of these two groups. This was confirmed by the finding that sera from patients with rheumatoid arthritis were also positive in the latex agglutination test for anti-lung antibodies, and this reactivity could be removed by absorption with human serum.

A latex agglutination reaction similar to that employed by Hennes and associates was used by Balchum and Van Dyke[4] to investigate the presence of lung antibodies in the sera of patients with the three major pulmonary diseases of man: Emphysema, tuberculosis and bronchogenic carcinoma. Positive agglutination reactions occurred with the serum of nine of ten patients with active pulmonary tuberculosis, eight of ten patients with emphysema, and 25 of 26 patients with proven lung cancer.

Burrell, Wallace, and Andrews[7] also examined the sera of patients with pulmonary disease for the presence of lung antibodies. Their antibody determinations were done by the rather complex procedures of complement fixation, complement consumption, and anti-globulin consumption tests employing both soluble and sedimented fractions of lung homogenate as antigens. Of 95 patients with pulmonary disease examined, 46 (48 per cent) were found to have antibodies reactive with one or the other of the antigens, the majority of the reactions occurring with the insoluble antigen preparation. By treating the antigen fractions with trypsin and/or heat (60C, 30 minutes), the authors were able to detect four components in the lung homogenate that were responsible for reactivity in their test systems.

The complement fixation test has been used by other investigators to study the sera of patients with various lung diseases. Awazu[2] detected anti-lung antibody in sera from two of four patients with bronchiectasis, two of four patients with lung abscess, all of nine patients with emphysema, and 126 of 287 patients with pulmonary tuberculosis. Racoveanu, *et al.*[13] measured antilung antibodies in the sera of 43 emphysematous patients and 16 healthy young adults using a saline extract of human lung as antigen. The results obtained with the patients did not differ significantly from those seen in the control group. No infor-

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mation was given on the tuberculin skin test results with the "normal controls," a point which might have some bearing on the high level of reactivity in this group. It has been reported[4] that individuals who have no pulmonary disease but who have recently become tuberculin skin test positive may have anti-lung antibodies in their serum.

It would seem to be fairly well established that patients with emphysema may have antibodies to lung tissue in their sera. The question to be answered is whether these antibodies cause the disease or are merely a result of the destruction of pulmonary tissue. The presence of anti-lung antibodies in association with bronchogenic carcinoma and pulmonary tuberculosis seems to support the latter hypothesis. However, the antigenic preparations which have been used to detect autoantibodies have been extremely complex, and the possibility exists that there may be more than one antigen-antibody reaction occurring in the test system. In fact, the results of some of the investigations cited above[7, 11] have presented suggestive evidence that this is the case.

Very little has been done to characterize the lung antigen involved in the positive serologic tests seen in emphysema. Hennes, *et al.*[11] suggested that a lipopolysaccharide, possibly derived from reticulin, was the reactive material. Proof of the antigenicity of lung tissue in the species of origin has been a great deal easier to obtain. In 1950, Frick[9] produced complement fixing anti-lung antibodies in a homologous species. He injected rats with rat lung tissue homogenized in Freund's adjuvant containing killed tubercle bacilli. Burrell and Rheins[6] demonstrated lung specific antibodies in rabbits following injections with suspensions of tuberculous lung tissues or emulsions of normal lung tissue in Freund's adjuvant.

Several investigators have attempted to produce autoimmune pulmonary disease in experimental animals. Read[14] found that by intratracheal, but not intravenous or intraperitoneal, administration of rabbit anti-rat lung serum to rats he could induce a destructive series of changes within the lungs which he classified as pneumonotoxic pneumonia.

In 1959, Crowle[8] reported the production of emphysema-like pulmonary lesions in guinea pigs inoculated with homologous lung homogenate in complete Freund's adjuvant. Approximately three weeks after immunization, the three animals involved in the experiment began breathing abnormally, and two died by the fifth week. The lungs were examined microscopically and found to contain areas of expanded tissue. In places stretched and degenerated alveolar septa were seen.

Balchum, *et al.*[3] were unable to confirm Crowle's work. In an extensive study of experimental emphysema they observed interstitial pneumonitis in guinea pigs which were undergoing either active auto-immunization with homologous lung tissue in complete Freund's adjuvant, or passive autosensitization with rabbit anti-guinea pig lung serum. However, morphologic alterations resembling those seen in human emphysema were not detected.

From the foregoing discussion it is obvious that an autoimmune etiology of emphysema has not yet been proven. However, it is established that the sera from patients with emphysema may contain antibodies reactive with extracts of human lung. It has also been shown that lung tissue can induce antibody production in the species of origin. The difficulty of producing emphysema in experimental animals either by passive or active sensitization to autologous lung tissue remains a major obstacle to the acceptance of an autoimmune etiology for this disease. □

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ABSTRACTS

GASTRIC SECRETION AND HISTOLOGY

In this study, the authors correlated gastric histology (tissue obtained by the peroral gastric biopsy tube) with secretory function of the stomach. The studies done in evaluating the latter function included maximal histamine-stimulated output of acid, proteolytic enzyme, hexose, and vitamin B_{12}-binding. Eighty-one adults with various diseases were studied and on the basis of histology were classified into four groups: 1. normal, 2. superficial gastritis, 3. atrophic gastritis (reduced parietal and chief cells), and 4. gastric atrophy (absent parietal and chief cells). Patients with superficial gastritis had pronounced reduction in volume, weight of gastric juice solids, and output of acid and proteolytic enzyme activity. The output of hexose and B_{12}-binding material was normal. Patients with gastritis and atrophy showed very little secretion of acid or proteolytic enzymes or both. Patients with complete glandular activity secreted small volumes of juice lacking acid and proteolytic enzyme activity but containing small amounts of B_{12}-binding material and with a high concentration of hexose. Vitamin B_{12} absorption was abnormal only in patients with gastric atrophy despite the fact that patients with gastritis and partial glandular atrophy showed little vitamin B_{12}-binding materials.

Reviewer's Note: As with previous studies by these authors, this represents a carefully planned and well evaluated study.

Correlative Study: Gastric Secretion and Histology. G. V. Rohrer and J. D. Welsh. Gastroenterology 52(2): 185-191, 1967.

CIRCULATION OF THE GI TRACT

This article presents an excellent review of the research being done to study blood flow and secretions of the gastrointestinal tract, pancreas and spleen with editorial comments on conflicting views and studies, the difficulty in assessing results, and the technical problems involved in setting up such studies.

Studies of irreversible shock have led investigators to the gastrointestinal circulation. Fine and his workers have thought that excessive adrenergic stimulation during prolonged hemorrhagic shock has caused splanchnic ischemia. The ischemia then leads to intestinal barrier breakdown to endogenous endotoxin and this imposed on shock leads to irreversibility and death. Abel observed a 60 per cent fall in portal venous pressure and a reduction in splanchnic blood flow. They found no evidence of splanchnic pooling. Price found that men subjected to removal of 20 per cent of their blood volume had no change in splanchnic blood flow, oxygen consumption, or lactate production; this is opposite to studies of the anesthetized dog and provides little evidence for a splanchnic-oriented shock.

There have even been studies of gastrointestinal blood flow during submersion asphyxia in diving animals. Johansen found the gastrointestinal blood flow decreased during submersion.

Reviewer's Note: This article presents an encyclopedic review which is very well done and an excellent bibliography which should be useful to those interested in the investigative aspects of gastroenterology.

The Circulation of the Gastrointestinal Tract. E. D. Jacobson. Gastroenterology, 52: 98-112, 1967.

RECENT PUBLICATIONS

The *Journal* welcomes the opportunity to list current publications by any Oklahoma physician.

Hamartoma of the Middle Ear and Eustachian Tube: Report of a Case. B. S. Eichel and O. E. Hallberg. Laryngoscope 76: 1810-1815, 1966.

Medical Education in Relation to Reducing Infant Mortality. J. L. Dennis. Preceedings A.M.A. National Conference on Infant Mortality. Page 87, March, 1967.

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Cancer of the Nasopharynx. P. W. Scanlon, R. E. Rhodes, L. B. Woolner, K. D. Devine, and J. B. McBean. Am. Jr. of Roentgenology, Radium Therapy and Nuclear Medicine 99: 313-325 (2) 1967.

Stress and the Gut (Editorial). S. Wolf. Gastroenterology 52: 288-289, 1967. □

OSMA JOURNAL / heart page

Hemodynamic Actions of Prostaglandins

JIRO NAKANO, M.D.*
J. RICHARD McCURDY, B.A.**

IN 1933-34, Goldblatt[1] and von Euler[2] independently isolated a potent depressor and smooth muscle stimulating substance from human seminal plasma, sheep prostate and seminal vesicle. The active principle was named prostaglandin (PG) by von Euler. Since 1957, Bergstrom and his coworkers have isolated a pure form of PG, and later determined the chemical structure and established the biosynthesis of the various prostaglandins (PGs). To the present, at least ten PGs and several PG metabolites have been identified. The chemical structure of some of the more potent vasoactive PGs are illustrated in figure 1. These PGs are naturally present not only in the accessory sexual glands and seminal plasma, but also in nearly all parts of the body in different species of animals.

Although extensive studies have been made on the chemical characterizations of the various PGs, relatively little definitive information is presently available on the physiology and pharmacology of PGs. It has been postulated that PGs may be physiologically important substances for (a) promoting sperm migration and conception through their actions on cervical, uterine and tubal motilities. A potent substance, medullin, recently isolated from the renal medulla by Lee, *et al.*,[3] has been identified as prostaglandin A (PGA). Medullin or PGA is found to be one of the essential

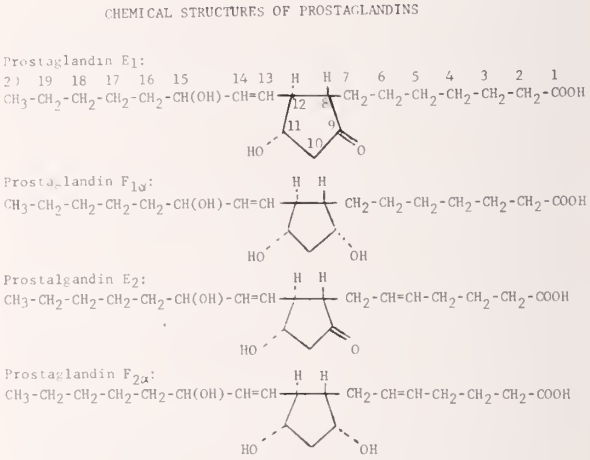


Figure 1. Chemical Structures of Prostaglandins.

humoral factors (b) to regulate systemic arterial pressure as well as renal blood flow (renal autoregulation) in individuals with ischemic kidneys. PGs also produce (c) a bronchodilator action conceivably in asthmatic patients and (d) possible regulation of CNS functions in animals. Furthermore, it appears to play a role on (e) the regulation of lipid metabolism by blocking the lipolytic action of catecholamines, ACTH and presumably other hormones in human subjects, dogs, and rats. The metabolic effects of PGs are most likely mediated through the inhibition of adenylcyclase activity and consequently through the decreased 3′,5′-AMP. Butcher and Sutherland have shown that the changes in the intracellular concentration of 3′,5′-AMP always influence hormone-sensitive lipase activity.

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**Second year Medical Student.

Although the metabolic actions of PGs appear to resemble those of the beta-receptor adrenergic blocking agents such as pronethalol and propranolol, it is not clear whether the pharmacodynamic actions of PGs are related to the adrenergic mechanism in various vascular and nonvascular smooth muscles. To the present, the precise cardiovascular effects of the different PGs other than PGE_1 and $PGF_{2\alpha}$ have not been elucidated.

Recent studies[4, 5] from this laboratory revealed that PGE_1 is a powerful vasodilator in all peripheral vascular beds. PGE_1 has approximately five times more vasodilator action than nitroglycerin although it is only one-fiftieth as potent as bradykinin. In anesthetized dogs, it was found that the intravenous administration of 0.25-4.0 μg/kg of PGE_1 decreased systemic arterial pressure and total peripheral resistance, and increased heart rate, cardiac output and myocardial contractile force in proportion to the dose given. The intra-arterial administration of 0.1 μg/kg of PGE_1 increased blood flows in brachial, femoral, carotid and renal arteries and decreased the peripheral vascular resistances in the respective artery without any change in heart rate, systemic arterial pressure and myocardial contractile force. On the other hand, the intra-arterial injection of the same dose of PGE_1 into the left coronary artery increased both the coronary arterial blood flow and myocardial contractile force without changing heart rate and systemic arterial pressure indicating the direct inotropic action of PGE_1. This effect was further elucidated by measuring left ventricular pressure curve and establishing left ventricular function curves. PGE_1 increased the value of the maximum rate of isometric tension rise (dp/dt) of the left ventricular pressure curve, and shifted the left ventricular function curves to the left, indicating the improvement of the cardiac performance by PGE_1.

As described previously, PGE_1 blocks the metabolic action of catecholamines in dogs and in human subjects. However, recent studies from this laboratory revealed that the hypotensive and positive inotropic actions of PGE_1 remained unchanged before and after the administration of propranolol (0.5 mg/kg) or phenoxybenzamine (15 mg/kg). However, the positive chronotropic action of PGE_1 was abolished following the administration of propranolol. Hence, the increased myocardial contractility induced by PGE_1 was mainly due to its inherent positive inotropic action on the heart. However, the reflex sympathetic stimulation secondary to hypotension induced by PGE_1 may be partially responsible for the increased myocardial contractile force since the acceleration of heart rate following PGE_1 was blocked by the administration of propranolol. From the studies made in this laboratory, one may conclude that PGE_1 causes neither alpha- nor beta-receptor adrenergic blocking action in the cardiovascular system.

Recently, DuCharme and Weeks[6] showed that $PGF_{2\alpha}$ was most likely due to the increased systemic venous return and cardiac output in dogs. Anggard found that $PGF_{2\alpha}$ was mainly synthesized from the lung tissues in different species of animals. One wonders whether $PGF_{2\alpha}$ would play a role on the regulation of pulmonary circulation in physiological and/or pathological conditions.

To the present, the cardiovascular effects of PGs other than PGE_1 and $PGF_{2\alpha}$ have not been elucidated. Many investigators have been tempted to speculate on the many physiological and pharmacological actions of PGs in the cardiovascular system as well as in the other systems of the living organisms. It would be of interest to await the future progress on the physiology and pharmacology of this group of fascinating biological substances (PGs) and their metabolites. The future investigations may reveal whether PGs would be an important homeostatic substance or become one of the ill-defined and ambiguous physiological entities such as histamine, bradykinin and Substance P. □

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Malcom Phelps Named AMA Vice-President

Oklahoma Pow-Wow Is Heap Big Hit

An El Reno family physician, Malcom E. Phelps, was elevated to the office of Vice-President of the American Medical Association by the unanimous vote of the AMA's House of Delegates during the 116th annual convention of the organization in Atlantic City, June 18th-22nd.

In addition to Doctor Phelps' own credentials as a prospective officer of the world's largest medical association, the Oklahoma State Medical Association provided a boost for its candidate as well as for the image of Oklahoma by sponsoring an "Oklahoma Pow-Wow" on the evening of June 19th for members of the AMA House of Delegates, AMA officials, and representatives of all state medical associations.

Four hundred persons attended the OSMA event which featured western music, Rattlesnake Hors d'oeuvres (from Okeene), Barbecued Buffalo (from Phillips Petroleum Company), Prairie Chicken Legs (from New Jersey Chicken farms), and Fire Water.

Over 20 Oklahomans staffed the party wearing "Heap Big Host" badges and actively buttonholing prospective voters.

Despite recurrent rumors of additional candidates, Phelps was uncontested at the time of nomination and received a complete endorsement of the AMA's governing body as did the AMA President-Elect, Dwight L. Wilbur, M.D., San Francisco.

As AMA Vice-President, Doctor Phelps will be privileged to attend meetings of the AMA Board of Trustees and to participate in discussions without the right to vote. He shall also be an ex-officio member of the AMA House of Delegates. In the event of a presidential vacancy, the AMA Vice-President accedes to the office.

The 61-year-old practitioner went to Vietnam in July, 1966, as field director of all AMA Volunteers for Vietnam and did not return until immediately before the AMA Atlantic City meeting. He was headquartered in Saigon but spent most of his time in the provinces visiting the



Assembled at the door of the Oklahoma Pow-Wow party room is a group of greeters who welcomed some four hundred guests at the AMA convention event honoring Malcom E. Phelps, M.D. Pictured are: Dwight F. Whelan, OSMA Associate Executive Secretary; Tom C. Points, M.D., Alternate Delegate to the AMA; Samuel R. Turner, M.D., Chairman of the OSMA Board of Trustees; Myra A. Peters, M.D., President-Elect of the Tulsa County Medical Society; Donald L. Brawner, M.D., President of the Tulsa County Medical Society; Mrs. Turner; Mrs. Jack Spears; Carl Behle, Arizona Blue Shield (formerly of Oklahoma); Harlan Thomas, M.D., Delegate to the AMA; Mrs. Thomas; James L. Dennis, M.D., OU Medical Center Dean; and Scott Hendren, M.D., OSMA President-Elect.

hospitals where other volunteers worked.

He has been in El Reno since 1931. Among the professional honors accorded him have been the offices of President and Treasurer of the American Academy of General Practice, membership on the national advisory committee for Salk Polio vaccine, and service on the medical advisory board of the Federal Aviation Agency.

Doctor Phelps has been a member of the AMA House of Delegates from Oklahoma since 1957. □

Regents Give Additional Titles To Doctors Dennis and White

James L. Dennis, M.D., dean of the University of Oklahoma School of Medicine and director of the Medical Center, has been given the additional title of OU vice-president for Medical Center affairs effective July 1st.

The higher rank was bestowed by the University of Oklahoma Board of Regents who at the same time conferred the new title of dean of the medical faculty upon Joseph M. White, M.D., formerly associate dean of the medical school. Doctor White retains the position of associate director of the Medical Center.

Doctor Dennis and Doctor White also hold the academic posts of professor of pediatrics and professor of anesthesiology, respectively.

Doctor Dennis, a graduate of the OU medical school, returned to his alma mater three years ago as dean and director. He had been associate dean (clinical affairs) at the University of Arkansas Medical Center.

Doctor White joined the OU faculty in 1955 as head of the Department of Anesthesiology. He later was named associate dean in charge of special research and training programs and in 1965 was promoted to associate director and associate dean. Doctor White is a graduate of Southwestern Medical College of the University of Texas. □

Medical Center Receives Grant for Study of Shock



WALTER H. MASSION, M.D.

A grant of $83,433 to the University of Oklahoma School of Medicine for research on the prevention of deaths from shock has been announced jointly by Ralph W. Burger, President of The John A. Hartford Foundation, Inc., of New York, and Doctor Joseph M. White, Dean of the Faculty.

This is the first grant to the medical school from the Hartford Foundation, a private philanthropic organization whose funds are allocated primarily to sponsor investigations in the medical sciences. The award will be paid over a three-year period for research to be directed by Doctor Walter H. Massion, Vice-Chairman, Department of Anesthesiology.

Shock is a major cause of death following hemorrhage from traffic accidents or some major surgery in which blood loss is unavoidable. It is also a problem in severe bacterial infections.

Doctor Massion has discovered promising leads to the cause of irreversible shock. Once the mechanism is understood, life-saving treatment can be developed, scientists believe.

One clue to the problem is found in the high-energy compound adenosine triphosphate (ATP) which is manufactured by the body as it is needed in the transformation of sugar into energy. Laboratory experiments at the Medical School have shown that although ATP levels are sharply reduced in the liver, kidney, heart, brain and muscles of animals in shock, most of those treated with laboratory-made ATP have survived. The compound, unfortunately, is not available today in a form sufficiently purified to be given to humans, Doctor Massion explained.

Under the grant program, Doctor Massion and co-workers will investigate the biochemical effects of the high energy phosphates. They want to know whether ATP actually moves into the cell and where and how it finally ends up in the body.

Knowledge of the role of the high energy phosphates in irreversible shock might open the door to prevention of shock deaths by means other than administration of ATP, Doctor Massion speculated.

"We would like to know why shock becomes irreversible — why, despite the administration of blood and drugs, the patient dies," Doctor Massion said.

"A patient in a severe automobile accident often is brought into the hospital after considerable loss of blood. We can give all the blood volume back and he still may die of shock. Irreversible shock is not strictly a matter of blood volume and we want to know why," he said.

Shock is a failure of the blood transport system and one theory is that it may result from a breakdown in the energy-releasing process in the heart.

Doctor Massion also holds a five-year research career development award from the National Institute of General Medical Sciences, Bethesda, Maryland.

A faculty member since 1957, he is an associate professor of anesthesiology, surgery and physiology and is a member of the Medical Center's limb replantation team. He was graduated from the University of Heidelberg, Germany, School of Medicine. □

OSMA Delegates' Actions Summarized

Economic Education Endorsed

Highlighting the 1967 annual meeting of the Oklahoma State Medical Association's House of Delegates in Tulsa was the approval of a major statewide health economic education program to be conducted over a period of three years.

The project resulted from the findings of a $28,000 survey sponsored in 1965 and 1966 by the OSMA, the Oklahoma Hospital Association and Oklahoma Blue Shield.

A sample of 1,500 hospitalized patients was studied in depth by the research director of the "Oklahoma Health Economic Task Force" to measure the quantity and quality of outstanding health insurance in the state and other social and economic characteristics of Oklahoma's population.

The survey report which was submitted to the House of Delegates concluded there are significant gaps in private health insurance coverage which, in the interest of preserving the private sector of health care financing, require the undertaking of a public information program on the basic of health economics as well as medical leadership in developing an improved prepayment mechanism

Usual and Customary Fees

Oklahoma Blue Shield, in a companion effort to the survey findings and projected plans, has announced the development of a new program to offer expanded benefits to subscribers as well as a plan to adopt the usual, customary and reasonable payment system for professional services.

In return, the House of Delegates has given Blue Shield a special endorsement as the preferred fiscal agent for health care financing while recognizing that some insurance companies also offer high-quality protection plans.

The educational program will be carried out at an expected cost of $36,000 the first year and $18,000 a year for the next two years, to be financed by sponsoring health organizations. OSMA is programmed to spend up to $24,000 as its share of the $72,000 total cost over the three-year period.

Implementation of the program will be carried out by a Health Economic Task Force appointed by the Governor and comprised of medical, hospital, prepayment, labor, industry and farm representatives. OSMA's representatives are B. C. Chatham, M.D., Chickasha (Chairman), Hayden H. Donahue, M.D., Norman, and Thomas C. Points, M.D., Oklahoma City.

FOUR!

Four physicians emerged victorious in the OSMA Annual Golf Tournament held during the recent association annual meeting at Meadowbrook Country Club, Tulsa. They were: Donald L. Cooper, M.D., Stillwater (Low Gross winner); Leon Combs, M.D., Shawnee (Low Net); Lawrence E. Silvey, M.D., Bethany (Low Gross runner-up); George M. Brown, Jr., M.D., McAlester (Low Net runner-up). Another entrant, James S. Williams, M.D., Bartlesville, received a trophy from tournament chairman William M. Benzing, Jr., M.D., Tulsa, for Last Place.

Other Actions

In separate policy decisions, the House of Delegates:

- Stated its opposition to further dues increases by the AMA.
- Reaffirmed its endorsement of the Insurance Company of North America as the preferred carrier of professional liability insurance for OSMA members.
- Concurred with the plan of the Department of Public Welfare to assume administrative control of Medicare payments on behalf of Old Age Assistance recipients as a means of resolving the confusion of dual billing for recovery of the basic Medicare allowance (Aetna) and the co-insurance and deductible (DPW).
- Recommended greater use of the direct billing option afforded to physicians under the Medicare Law.
- Called for greater efforts toward harmony between the various governmental agents and insurance organizations having responsibility for the operation of Medicare.
- Admonished carriers for Titles XVIII and XIX of Medicare to make fuller use of the Medical Insurance Review Committees established by the OSMA and its county medical societies for the purpose of reviewing problem cases involving physicians' charges.
- Recommended stronger and more comprehensive efforts to improve OSMA communication and promote understanding of the Workmen's Compensation program.
- Urged the American Medical Association to conduct an annual conference for members of state legislatures to brief them on medical affairs and policies. (Later adopted by the AMA House of Delegates.)
- Voted to continue the "Doctor of the Day" aid station at the State Capital during legislative sessions.
- Endorsed the second annual "OSMA Forum on Medicine and Government," to be held in conjunction with the 1968 OSMA annual meeting in Oklahoma City.
- Authorized a feasibility study regarding the projected sponsorship of a major "Health Science Fair" in January, 1969.
- Reactivated committees in the fields of osteopathy, pharmacy, medicolegal, nursing, medicine and religion, and chiropractic which had previously been under the general direction of an overall council.
- Approved a budget of $200,675 for the 1967-68 fiscal year, of which $130,000 would come from dues and the balance from earned income.
- Voted to continue a postgraduate education activity featuring the annual meeting, statewide mental health conference, regional short courses, and a year-around series of educational television programs.
- Adopted a new and more representative official seal for the association.
- Defined and deplored itinerant

surgery as not in the best interest of patient care and encouraged hospital medical staffs to establish and enforce rules of control.

• Contributed $5,000 to assist the University of Oklahoma School of Medicine in achieving matching federal funds for an expanded student loan fund, and authorized the Board of Trustees to exercise its discretion in contributing up to an additional $5,000, if necessary.

• Received a report from the Board which revealed a total of 2,083 OSMA members.

• Approved an analysis of the "Millis Report" of the AMA on postgraduate education of physicians. The report of an OSMA study committee concluded that the Millis Report, while pointing up some interesting patterns of change, is too generalized for definitive action and should only serve as a stimulant for a continuing study by the AMA, constituent medical associations, and medical schools. Moreover, the OSMA group approved the Millis recommendation to transform the internship year into the first year of residency, but questioned the need for a required four-year residency program for family practitioners, suggesting instead that premed and basic science years be combined to make additional postgraduate training more palatable. □

"Psychiatry For the Non-Psychiatrist" To Be Offered by Med School

The University of Oklahoma Medical Center for the fourth year will offer practicing physicians a course in "psychiatry for the non-psychiatrist," James L. Mathis, M.D., assistant professor of psychiatry announced.

Weekly sessions will begin September 14th and continue through May 16th. Classes will be held from 1:30 to 8:30 p.m. Thursdays.

Doctor Mathis said August 1st is the deadline for making application. A maximum of 14 physicians can be accepted. Requests for admission should be addressed to him.

The course covers the entire field of psychiatry but emphasis is upon those parts applicable to medical practice not limited to emotional problems. There are didactic lectures, seminars, interview demonstrations, direct patient care in the outpatient clinics, and case presentations by the enrolees.

The course is supported by a grant from the National Institute of Mental Health.

Thirty-eight state doctors have completed the course since it was started in 1964. At the request of the first group, the department initiated a follow-up program for "graduates" who wish to return to the Medical Center for postgraduate work one day a month. Most members of the 1964-65 group and subsequent classes are still returning for the monthly sessions, Doctor Mathis said. □

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DONALD L. COOPER, M.D.

Oklahoman To Participate in International Conferences

Donald L. Cooper, M.D., of Oklahoma State University will take part in two international conferences on student health in Czechoslovakia and the Soviet Union this summer. He is director of the student health center and is team physician at the university.

As current president of the American College Health Association, Doctor Cooper will be the chairman of the U.S.A. delegation at the first American-Soviet Conference on Student Health ever to be held. It is scheduled in Moscow on July 17th, 18th, and 19th.

Before the Moscow conference, Cooper will represent the association at the Fifth International Congress of School and University Health in Prague July 11th through 14th.

"This congress is only held every five years," said Cooper, "and it is my good fortune to be president of A.C.H.A. this year, thus making it possible for me to attend." The association numbers more than 517 colleges and universities as institutional members and has 1,119 individual members.

He will preside at one of the special sessions of the congress and also will read a paper at this international meeting for medical people concerned with problems of school and university health.

At the first American-Soviet conference the following week, Cooper has been asked to present three papers on student health.

"I believe this to be an important contact," he said. "It is hoped that this type of exchange of information and communication can become a regular event that would occur after future international congresses," he declared.

Cooper will be accompanied by his wife and four children on his three-week trip overseas.

A native Kansan, Cooper was born at Columbus, was graduated from high school at Pittsburg, and received his A.B. degree from Kansas State College there in 1949. He received his medical degree upon graduation from the University of Kansas School of Medicine in 1953.

Following internship, he served two years as a captain in the air force medical corps. He entered private practice at Manhattan, Kansas, for two years, then joined Kansas State University there as team physician and assistant director of student health services.

He was appointed to his present post at Oklahoma State University in 1960.

Cooper also has been selected for another international assignment. He will be a team physician for the United States Olympic team at the XIX Olympiad in October, 1968, at Mexico, City. □

Sites Selected for 1967 Postgraduate Courses

The OSMA Council on Professional Education has selected the following sites for the conducting of nine Regional Postgraduate Education Courses for this fall: McAlester, Woodward, Ada, Enid, Muskogee, Miami, Ponca City, Lawton and Edmond. □



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From the Daily Oklahoman, May 30, 1967

Loan Fund Checks Presented to Medical School

The Oklahoma State Medical Association presented loan fund checks totaling $7,655.00 to the University of Oklahoma School of Medicine, May 29th. Rex Kenyon, M.D., Oklahoma City, left, chairman of the OSMA Financial Aid to Education Committee, hands the checks to James L. Dennis, M.D., right, dean and director of the OU Medical Center, while Bill McDaniel, junior medical student from Blackwell, looks on. The checks will provide matching funds for federal allocations to the student loan program. □

Kenyon Leads Victory Team in Medical Bowl Quiz

OSMA Past-President Rex Kenyon, M.D., captained the winning team in the American Medical Association's "Medical Bowl" quiz competition staged during the AMA annual meeting in Atlantic City.

Patterned after the popular "General Electric College Bowl" on television, the AMA contest pitted teams of physicians from the North, South, East and West in a fast-paced grilling on government, history, legislation and politics.

Kenyon's South team defeated the North by a lopsided score on June 19th, then on the following day it narrowly downed the West which had earlier bested the East team. All matches were telecast by delayed videotape into all hotel rooms in the Atlantic City area.

Serving as panelists with Doctor Kenyon were James H. Sammons, M.D., Baytown, Texas, and Edgar T. Beddingfield, M.D., Stantonsburg, North Carolina.

Trophies were awarded by the AMA to the winners.

Doctor Kenyon is chairman of the OSMA Governmental Relations Committee and is state chairman of the Oklahoma Medical Political Action Committee. □

Doctors Urged To Sign Death Certificates

The Oklahoma State Board of Embalmers and Funeral Directors has requested OSMA to urge all physicians to sign death certificates as soon as they are completed.

Oklahoma law provides that a body cannot be legally moved or buried until the certificate is on record and a burial permit is issued.

It is the duty of the funeral director to obtain and file the death certificate with the local registrar within 72 hours after death. The certificate cannot be filed unless it is signed by the attending physician.

Effective July 1st the local registrar is to forward all death certificates and burial permits to the State Health Department weekly. They are to be mailed each Friday.

According to Mr. V. L. Curtis of the Board of Embalmers, occasionally a physician will forget the signing of the certificate past the 72-hour limit. □



Alumni Association Honors Doctor Dennis

A gift of silk cap, gown and hood from the Alumni Association of the School of Medicine is presented James L. Dennis, M.D., OU vice-president for Medical Center affairs, by Johnny A. Blue, M.D., Oklahoma City, alumni president. At the left is Doctor E. T. Dunlap, chancellor, State Regents for Higher Education. The presentation was made on medical school commencement eve at the Alumni Association's annual honoring house for graduating seniors. The honoring party was at the Faculty House. □

Statewide OMPAC Seminar Slated

A statewide political action seminar has been announced for October 21st-22nd in Oklahoma City by Rex Kenyon, M.D., State Chairman of the Oklahoma Medical Political Action Committee.

Termed a "Conference on Political Education," the day and a half program will feature veteran political observers and politicians of state and national stature.

Invitees include two board members of the American Medical Political Action Committee, a delegation from the league-leading Oregon Medical Political Action Committee, two U.S. Congressmen, the President Pro Tempore of the Oklahoma State Senate, and the Oklahoma chairmen of the Democratic and Republican parties.

All business sessions are scheduled for the Skirvin Tower Hotel, and a social event is being planned for Saturday evening.

Doctor Kenyon says the meeting will be "a practical course in practical politics . . . a complete revelation for the uninitiated and a challenge to the more sophisticated who have neglected their citizenship responsibilities."

All members of the association and their wives will be invited to attend.

Oklahoma's OMPAC is now approaching 700 dues-paying members, and is rated fourth in the nation for percentage of enrolment and first in growth during the past year.

"Interest in political activity and responsibility has never been higher in Oklahoma's medical community," Kenyon said, "and we expect the October conference to provide even greater emphasis on this essential program as we approach the 1968 election year." □

DEATHS

CARROLL M. POUNDERS, M.D.
1892-1967

A prominent Oklahoma City pediatrician and allergist, Carroll M. Pounders, M.D., died in Oklahoma City, May 30th, 1967. Born in Alabama, Doctor Pounders was a 1918 graduate of Tulane University School of Medicine. After practicing in the Panama Canal Zone for three years, he took postgraduate work in Boston and New York City. He came to Oklahoma City in 1922 where, in addition to his private practice, he became professor of clinical pediatrics at the University of Oklahoma Medical Center.

Doctor Pounders was a Fellow of the American Academy of Allergy, a member of the Southern Medical Association, the American College of Physicians, the American Academy of Pediatrics, the American College of Allergists and the Southwestern Forum of Allergy.

WILLIAM J. TRAINOR, M.D.
1878-1967

Retired Tulsa physician, William J. Trainor, M.D., died May 6th, 1967, in Wilmington, Ohio.

A 1903 graduate of Baltimore Medical College, Doctor Trainor practiced in West Virginia before coming to Tulsa in 1915. He practiced there until his retirement in 1953. He was a member of the American Academy of Cardiology and the American Heart Association.

In 1954, a Life Membership in the Oklahoma State Medical Association was presented to Doctor Trainor.

RUSSELL C. PIGFORD, M.D.
1898-1967

A retired heart specialist and cofounder of the Tulsa County Heart Association, Russell C. Pigford, M.D., died in Tulsa, June 1st, 1967.

Born in Lockhart, Mississippi, Doctor Pigford graduated from Tulane University School of Medicine in 1924. In 1929, he began his practice in Tulsa.

He was a Fellow of the American College of Physicians, a Diplomate of the American Board of Internal Medicine, a member of the American Therapeutic Society, a Past-President and Honorary Director of the Tulsa County Medical Society.

WILLIAM A. MEYERS, M.D.
1890-1967

William A. Meyers, M.D., Tulsa physician, died June 17th, 1967, in Tulsa. He had served in the Public Health field in Tulsa since shortly after World War II.

A native of New York, Doctor Meyers graduated from the University of Oklahoma School of Medicine in 1927, where he took a residency in pathology.

He was a Diplomate of the American Society of Clinical Pathologists.

JOSEPH T. PHELPS, M.D.
1890-1967

A retired El Reno physician, Joseph T. Phelps, M.D., died in El Reno, June 27th, 1967. A native of Newton, Texas, he graduated from the University of Oklahoma School of Medicine in 1919. The same year he established his practice in El Reno where be practiced continually until his retirement 38 years later.

Doctor Phelps was active in both medical and civic affairs in El Reno. He was a past-president of the University of Oklahoma Alumni Association.

In 1957, the Oklahoma State Medical Association presented Doctor Phelps with an Honorary Membership in recogniton of his outstanding service to the medical profession. □

Planning Underway For 1968 OSMA Annual Meeting

Preliminary planning is well underway for the conducting of the 1968 OSMA Annual Meeting, scheduled to be held in Oklahoma City's Skirvin Hotel Convention Center on May 16th-19th, 1968. □

Aesculapian Awards Made



Top teacher citations at the University of Oklahoma School of Medicine were won by Mrs. Jean Tucker, assistant director of the Heart Station, and Doctor Garman H. Daron, professor of anatomy. With them, standing, are L. A. Myers, left, then Student Council president, and William Dale Smith, senior class president. The Student Council presents the Aesculapian Awards annually to a clinical and a pre-clinical faculty member selected by student vote. □

Eighty-nine Graduate From Medical School

Eighty-nine men and women were graduated from the University of Oklahoma School of Medicine in exercises at 2:30 p.m., Sunday, June 11th at Holmberg Hall on the Norman campus.

Doctor Merlin K. DuVal, dean of the new University of Arizona College of Medicine, Tucson, gave the commencement address. Doctor DuVal was assistant director of the University of Oklahoma Medical Center and a professor of surgery before going to Arizona in 1964.

Doctor of Medicine degrees were conferred by Doctor George L. Cross, OU president, and Doctor James L. Dennis, dean and director of the medical center. Doctor Joseph M. White, associate dean and director, administered the Hippocratic Oath.

The new physicians were welcomed into the Alumni Association of the School of Medicine by Doctor Johnny A. Blue, Oklahoma City, president.

A reception honoring graduates, their families and guests was held in the Memorial Union after commencement.

Members of the graduating class, listed by hometown, and their internship appointments are:

ADA—Randel A. Patty, Wilford Hall U.S. Air Force Hospital, Lackland Air Force Base, Texas.

ARDMORE—William M. Cheatham, Baptist Memorial Hospital, Oklahoma City; Stanley J. Locke, St. Joseph's Hospital, Denver; and William W. Wallace Jr., Ben Taub General-VA Hospital, Houston.

BARTLESVILLE—John R. Pettigrove, Ben Taub General-VA Hospital, Houston.

BEAVER—R. E. Hardberger Jr., University of Oklahoma-VA Hospitals, Oklahoma City.

BETHANY — Joseph D. McKean Jr., U.S. Naval Hospital, St. Albans, New York.

BLACKWELL—Don A. Wilson, U.S. Naval Hospital, Portsmouth, Virginia.

CADDO—Jack Pettett, University of Oklahoma-Presbyterian Hospitals, Oklahoma City.

CHICKASHA — Jeane P. Hester, University of Oklahoma-VA Hospitals, Oklahoma City.

CLINTON—Ronald J. Hill, Grady Memorial Hospital, Atlanta, Georgia.

COLLINSVILLE—Elmer L. Treat, University of Oklahoma-VA Hospitals, Oklahoma City.

CORDELL—George B. Flaming, St. Anthony Hospital, Oklahoma City.

DUNCAN—Robert J. Weedn, University of Oklahoma-VA Hospitals, Oklahoma City.

ENID—John T. Craig Jr. and Ronald J. North, University of Oklahoma-VA Hospitals, Oklahoma City; and Robert A. Dix, Baptist Memorial Hospital, Oklahoma City.

FAIRVIEW—Harold J. Woodward, St. Anthony Hospital, Oklahoma City.

HAILEYVILLE—William W. Pingleton, University of Oklahoma-VA Hospitals, Oklahoma City.

HARTSHORNE—Kenneth R. Miller, Hillcrest Medical Center, Tulsa.

HENRYETTA — Stanley J. Dombek Jr., St. Anthony Hospital, Oklahoma City; Clarence A. Riser, St. Anthony Hospital, Oklahoma City.

HUGO—Elmo Robison Jr., St. Anthony Hospital, Oklahoma City.

JET—Leo A. Myers, John Peter Smith Hospital, Fort Worth.

KINGFISHER—James R. Waren, St. Anthony Hospital, Oklahoma City.

LAWTON—Earl Howard Parsons, Methodist Hospital of Dallas; and William J. F. Bird, University of Oklahoma-VA Hospitals, Oklahoma City.

LEXINGTON—David G. Sherman, Ben Taub General-VA Hospitals, Houston.

MARIETTA — Kenneth L. Evans, John Peter Smith Hospital, Fort Worth.

McALESTER — William C. Culp, University of Oklahoma-Presbyterian Hospitals, Oklahoma City; and Coy Freeman, Johns Hopkins Hospital, Baltimore.

MIAMI, OKLA.—Robert W. Shaw, Brooke General Hospital, U.S. Army, San Antonio.

MUSKOGEE—Edwin F. Ellis, St. Joseph's Hospital, Wichita, and Judy C. R. Patzkowsky, Baptist Memorial Hospital, Oklahoma City.

NEWKIRK—John H. Stuemky, St. Joseph's Hospital, Milwaukee.

NOWATA — William D. Smith, Parkland Memorial Hospital, Dallas.

OKEMAH—Thomas W. Coale, St. Anthony Hospital, Oklahoma City.

OKLAHOMA CITY — James D. Bowie, U.S. Naval Hospital, Chelsea, Massachusetts; Lincoln J. Bynum, University of Oklahoma-VA Hospitals; Joe E. Coker, U.S. Naval Hospital, Philadelphia, Pennsylvania; William F. Cook Jr., U.S. Naval Hospital, Bethesda, Maryland; Gene C. Cunningham Jr., University of Oklahoma-VA Hospitals, Oklahoma City; Robert A. Dickey, University of Oklahoma-Presbyterian Hospitals, Oklahoma City; Mayo D. Gilson, U.S. Naval Hospital, Portsmouth, Virginia; Martin E. Glasser, San Francisco General Hospital; Robin R. Gunning, St. Mary's Hospital, St. Louis; Charles L. Ham, U.S. Naval Hospital, Newport, Rhode Island; William M. Jackman, U.S. Naval Hospital, St. Albans, New York; Mark A. Kelley, Hillcrest Medical Center, Tulsa; Robert B. Livingston, Parkland Memorial Hospital, Dallas; Robert B. McCloy Jr., University of Oklahoma-VA Hospitals, Oklahoma City; James R. Ricks III, Hillcrest Medical Center, Tulsa; Fenton M. Sanger, St. Anthony Hospital, Oklahoma City; Charles W. Seward, Baptist Memorial Hospital, Oklahoma City; Naebeal L. Shadid and Norman P. Singer, St. Anthony Hospital, Oklahoma City; John J. Stamatis, University of Oklahoma-VA Hospitals, Oklahoma City; Walter J. Stark, Duke Hospital, Durham, North Carolina; and Richard B. Stice, U.S. Naval Hospital, Portsmouth, Virginia.

PONCA CITY—Ralph L. McLaury, Walter Reed General Hospital, Washington, D.C.

PRYOR—William E. Dieker, St. John's Hospital, Tulsa.

RUSH SPRINGS—Joseph E. Leonard, University of Oklahoma-Presbyterian Hospitals, Oklahoma City.

SAPULPA—Erma Jean Mauch and David E. Wyatt, Cincinnati Ohio General Hospital.

SHAWNEE—Johnny H. Jones Jr., University of Oklahoma-Presbyterian Hospitals, Oklahoma City.

STILLWATER—Curtis S. Williams, Madigan General Hospital, U.S. Army, Tacoma, Washington.

TAHLEQUAH—Charles R. Gosnell, Larry G. Graham, and William T. Perryman, St. John's Hospital, Tulsa; and Daniel W. Tubb, St. Francis Hospital, Wichita.

TISHOMINGO—Russell C. Mitchell, Wilford Hall U.S. Air Force Hospital, Lackland Air Force Base, Texas.

TIPTON—Garland L. Parks, St. Anthony Hospital, Oklahoma City.

TULSA—Victor Gary Anderson, St. Francis Hospital, Wichita; Steven S. Cohenour, St. Anthony Hospital, Oklahoma City; Jeffrey T. Collins, U.S. Public Health Service Hospital, Staten Island, New York; Gary W. Elam, University of Oklahoma-VA Hospitals, Oklahoma City; Joe B. Harbison, University of Texas Medical Branch Hospitals, Galveston; Bob E. Lynch, University of Oklahoma-VA Hospitals, Oklahoma City; John M. Shane, Michael Reese Hospital, Chicago; Judith M. Sherman, Ben Taub General-VA Hospital, Houston; Michael B. Smith, University of Oklahoma - Presbyterian Hospitals, Oklahoma City.

WAKITA—Dale Gene Claflin, University of Oklahoma - Presbyterian Hospitals, Oklahoma City.

DENVER — Elizabeth H. White, University of Oklahoma-VA Hospitals, Oklahoma City.

FAYETTEVILLE, ARK.—Spencer H. Brown Jr., University of California Hospital, Los Angeles.

FORT WORTH — Sally Holden, Methodist Hospital of Dallas.

SANTA BARBARA, CALIF.—Charles H. Lapo, Kern County General Hospital, Bakersfield, California.

SIOUX CITY, IOWA — Gary G. Shrago, San Francisco General Hospital.

WINTHROP, MASS.—Christian E. Kaufman, University of Oklahoma-VA Hospitals, Oklahoma City.

ULYSSES, KAN.—John Christiansen, St. Joseph's Hospital, Milwaukee. □

Thirty-first Legislature Applauds OSMA

At the conclusion of the First Session of the Thirty-first Oklahoma Legislature, the House and Senate members unanimously adopted House Concurrent Resolution No. 545, a resoultion commending the Oklahoma State Medical Association for the provision of medical services to members of the Oklahoma Legislature. The "Doctor of the Day" and First Aid Station projects were sponsored jointly by the OSMA and the Oklahoma Academy of General Practice.

Section 1 of the resolution reads, "That the Oklahoma State Medical Association be and it is hereby commended for the many services which it provides for the medical profession, the people of Oklahoma, and the Oklahoma Legislature and for having provided the services of a doctor for each legislative day of the First Session of the Thirty-first Oklahoma Legislature." □

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FOR SALE: Two surgical laparotomy sets; two D & C sets; one hemorrhoidectomy set; one cystoscope; one tracheotomy set; one T & A set; one complete set bone instruments with pins, nails, plates, etc. Contact D. W. McCauley, M.D., V.A. Hospital, Muskogee, Oklahoma.

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LOCUM TENENS wanted. Available July and August, 1967. Have served rotating internship and will complete one-year residency in obstetrics and gynecology in June. Contact Gary F. Strebel, M.D., 835 Madison, Oklahoma City. Phone GA 7-1353. □



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TO:

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6 DATE OF ONSET | 7 DATE FIRST CONSULTED | 8. DUE TO PREGNANCY ☐ YES ☐

11 SURGICAL OR OBSTETRICAL PROCEDURES (DESCRIBE)

12. IF HOSPITALIZED, NAME AND ADDRESS OF

15 NAME AND ADDRESS OF OTHER P

COMPLETE IF PATIEN

16 TOTAL DISAP

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APPROVED BY THE OKLAHOMA STATE MEDICAL ASSOCIATION

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New view of an oral contraceptive at work

Although suppression of ovulation remains the primary mode of action of oral contraceptives, newer knowledge indicates that products like Norinyl-1— a combination of both low-dosage progestogen and estrogen for the full treatment cycle—may provide multiple action that helps explain their unexcelled record of contraceptive effectiveness. This report explores the possible secondary protective mechanisms offered by combined hormonal administration.

Accumulating evidence has indicated that sparse, highly viscous cervical mucus has a possible adverse effect on the motility and survival of spermatozoa.

The estrogen-opposing progestational ingredient of Norinyl-1 (norethindrone 1 mg. with mestranol 0.05 mg.) changes the usual midcycle picture of a thin, watery cervical mucus. The result—a built-in barrier that appears to inhibit sperm from reaching the ovum should one be released. The inset in the adjoining photograph shows immobile spermatozoa as they appear in cervical mucus taken from a patient treated with Norinyl-1.

See last page for contraindications, precautions, side effects and dosage.

How the estrogen-opposing action of Norinyl-1 creates cervical mucus that may be hostile to sperm penetration

Normally, estrogen activity during the fertile midcycle stimulates the production of a profuse and watery cervical mucus that permits maximum sperm motility and promotes penetration.

But what happens when Norinyl-1 is administered? Its potent progestogen, norethindrone, opposes estrogen stimulation of cervical mucus. Consequently, the amount of mucus decreases and its viscosity increases. This results in a sparse but thick mucus barrier that appears to diminish the vitality of the sperm and to impair its powers of penetration.

The role of viscous cervical mucus as a secondary action of Norinyl-1

In a report on 89 patients taking this medication,* cervical mucus obtained from cycle day 5 to cycle day 29 appeared scant and thick and exhibited little or no Spinnbarkeit.

In the opinion of this investigator, the effect on cervical mucus may be sufficient to prevent conception.

*Cohen, M. R.: Symposium: Mechanisms of Action of Low Dosage Oral Contraceptive, Yale University Medical Center, New Haven, Conn., April 6, 1967.

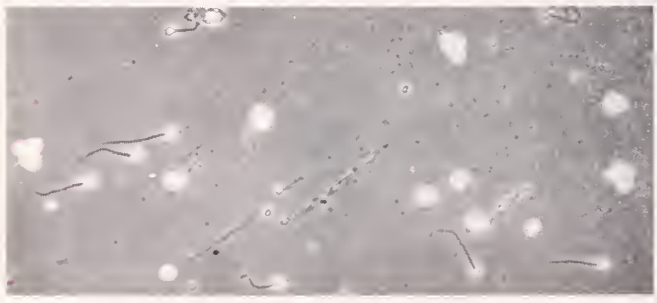
Normal cervical mucus at midcycle in untreated patient is known to permit sperm motility... promote sperm penetration.



Cervical mucus is thin and watery with a stretchability (Spinnbarkeit) of 15 to 20 cm.



Thin, watery mucus crystallizes into this well-defined, fernlike pattern within a minute.

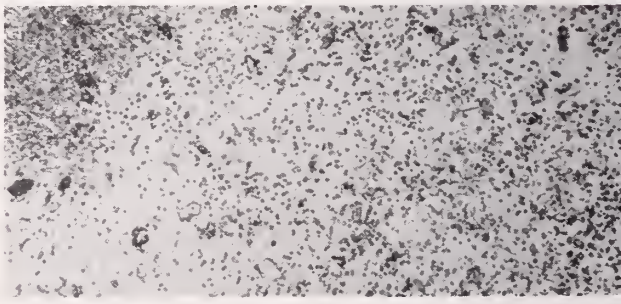


Spermatozoa appear healthy, are active and freemoving.

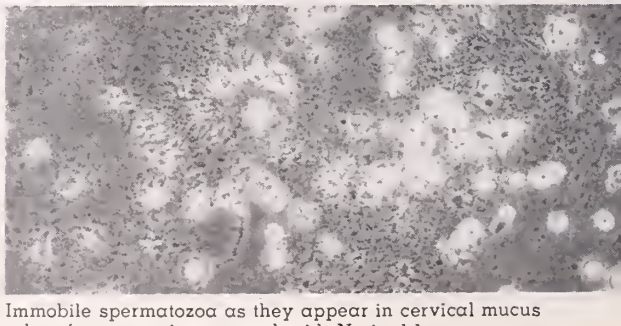
Viscous cervical mucus at midcycle produced by Norinyl-1 appears to impair sperm vitality... inhibit penetration.



Cervical mucus is scanty, thick and viscous. Spinnbarkeit is 1 cm. or less.



In thick, viscous cervical mucus the fern pattern is poorly defined or absent.

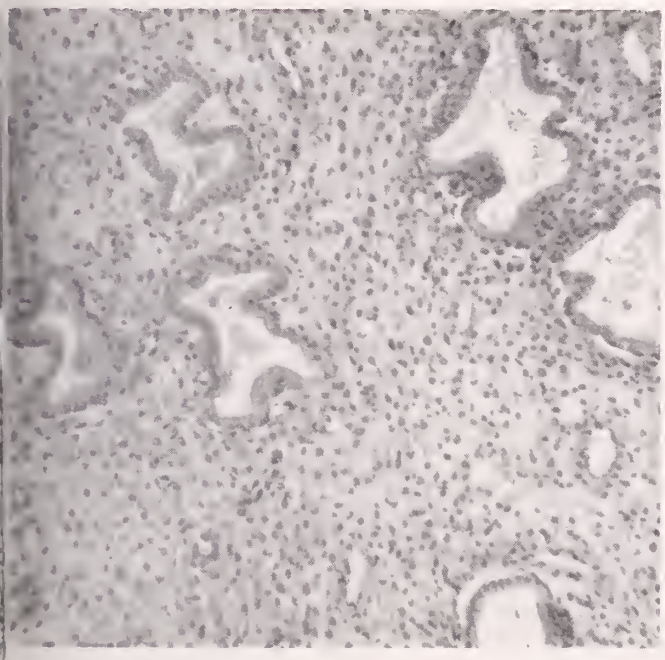


Immobile spermatozoa as they appear in cervical mucus taken from a patient treated with Norinyl-1.

How Norinyl-1 alters normal endometrial responses—another possible protective mechanism

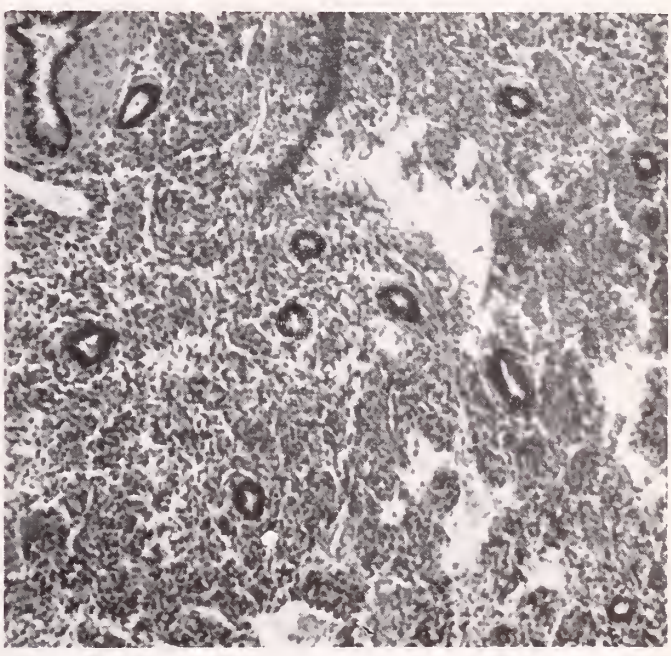
Let us suppose that an ovum is released—as occurs in an occasional, rare case—and somehow a sperm succeeds in penetrating the cervical mucus barrier. Should this come about, one additional action of Norinyl-1 may protect the patient from unwanted pregnancy. The theory is that progestogen intake makes endometrial tissue unreceptive to implantation.

Endometrium of untreated patient



Normally, the endometrium progresses through a proliferative phase stimulated by estrogen and a secretory phase stimulated by progesterone. During the secretory phase the endometrium is receptive to the fertilized ovum.

Endometrium produced by Norinyl-1



When Norinyl-1 is administered its progestogen component—norethindrone—accelerates the secretory phase and suppresses glandular and vascular development.

new Norinyl-1® tablets

(norethindrone 1mg. & mestranol 0.05mg.)

See last page for contraindications, precautions, side effects and dosage.

effective fertility control
on half the previous dosage

maintains ratio
of the established
norethindrone/mestranol
combination

lower cost

new Norinyl-1®

(norethindrone 1mg. c̄ mestranol 0.05mg.) **tablets**

Reduction of oral contraceptive dosage to lowest effective levels has become a well-accepted principle of conservative medical practice In keeping with this view, Norinyl is now available in a new strength in which *both* norethindrone and mestranol are reduced 50 percent Studies show that Norinyl-1 achieves fertility control with only 1.05 mg. of combined progestogen and estrogen per tablet.

Norethindrone was first reported for use as a progestational agent in human beings in 1955. Norethindrone 2 mg. with mestranol 0.1 mg., as an oral contraceptive, is currently in use by over 2,000,000 women Clinical experience now establishes that Norinyl-1 also amply meets the criteria of reliability and safety.*

*Symposium on Low-Dosage Oral Contraception, Palo Alto, Calif., July 15, 1965.

PRESCRIBING INFORMATION

Contraindications: 1. Patients with thrombophlebitis or with a history of thrombophlebitis or pulmonary embolism. 2. Liver dysfunction or disease. 3. Patients with known or suspected carcinoma of the breast or genital organs. 4. Undiagnosed vaginal bleeding.

Warnings: 1. Discontinue medication pending examination if there is sudden partial or complete loss of vision or if there is a sudden onset of proptosis, diplopia, or migraine. If examination reveals papilledema or retinal vascular lesions, medication should be withdrawn. 2. Since the safety of Norinyl-1 in pregnancy has not been demonstrated, it is recommended that for any patient who has missed two consecutive periods, pregnancy should be ruled out before continuing the contraceptive regimen. If the patient has not adhered to the prescribed schedule, the possibility of pregnancy should be considered at the time of the first missed period. 3. Detectable amounts of the active ingredients in oral contraceptives have been identified in the milk of mothers receiving these drugs. The significance of this dose to the infant has not been determined.

Precautions: 1. The pretreatment physical examination should include special reference to breast and pelvic organs, as well as a Papanicolaou smear. 2. Endocrine and possibly liver function tests may be affected by treatment with Norinyl-1. Therefore, if such tests are abnormal in a patient taking Norinyl-1, it is recommended that they be repeated after the drug has been withdrawn for 2 months. 3. Under the influence of estrogen-progestogen preparations, preexisting uterine fibroids may increase in size. 4. Because these agents may cause some degree of fluid retention, conditions that may be influenced by this factor, such as epilepsy, migraine, asthma, cardiac, or renal dysfunction, require careful observation. 5. Although a cause and effect relationship has not been established, Norinyl-1 should be used with caution in patients with a history of cerebrovascular accident. 6. In relation to breakthrough bleeding, as in all cases of irregular bleeding per vaginam, nonfunctional causes should be borne in mind. In cases of undiagnosed vaginal bleeding, adequate diagnostic measures are indicated. 7. Patients with a history of psychic depression should be carefully observed and the drug discontinued if the depression recurs to a serious degree. 8. Any possible influence of prolonged Norinyl-1 therapy on pituitary, ovarian, adrenal, hepatic or uterine function awaits further study. 9. A decrease in glucose tolerance has been observed in a small percentage of patients on oral contraceptives. The mechanism of this decrease is obscure. For this reason, diabetic patients should be carefully observed while receiving Norinyl-1 therapy. 10. Because of the occasional occurrence of thrombophlebitis and pulmonary embolism in patients taking oral contraceptives, the physician should be alert to the earliest manifestations of the disease. A cause and effect relationship has not been demonstrated. 11. Because of the effects of estrogens on epiphyseal closure, Norinyl-1 should be used judiciously in young patients in whom bone growth is not complete. 12. The age of the patient constitutes no absolute limiting factor, although treatment with Norinyl-1 may mask the onset of the climacteric. 13. The pathologist should be advised of Norinyl-1 therapy when relevant specimens are submitted.

Side Effects: The following adverse reactions have been observed with varying incidence in patients receiving oral contraceptives: nausea, vomiting, gastrointestinal symptoms, breakthrough bleeding, spotting, change in menstrual flow, amenorrhea, edema, chloasma, breast changes (tenderness, enlargement and secretion), loss of scalp hair, change in weight (increase or decrease), changes in cervical erosion and cervical secretions, suppression of lactation when given immediately postpartum, cholestatic jaundice, erythema multiforme, erythema nodosum, hemorrhagic eruption, migraine, rash (allergic), itching, rise in blood pressure in susceptible individuals, mental depression.

The following occurrences have been observed in users of oral contraceptives. A cause and effect relationship has not been established: thrombophlebitis, pulmonary embolism, neurooocular lesions.

The following laboratory results may be altered by the use of oral contraceptives: increased bromsulphalein retention and other hepatic function tests, coagulation tests (increase in prothrombin, factors VII, VIII, IX and X), thyroid function (increase in PBI and butanol extractable protein-bound iodine and decrease in T^3 values), metapyrone test, pregnanediol determination.

Other side effects reported to have occurred in association with use of this drug are dizziness, hirsutism, pains in legs, back, chest and abdomen, dysuria, drowsiness, vaginal discharge, libido increased and decreased, eruptions, hypermenorrhea, hypomenorrhea, increased appetite, G.U. infections, varicose veins, abdominal fullness, acne, headache, nervousness, allergies, blurred vision, pain in eyes, and itching in eyes. *For complete clinical data, see package insert.*

Dosage and Administration: 1. One tablet of Norinyl-1 is administered orally for 20 days beginning on day 5 of the menstrual cycle. (Count day 1 of the cycle as the first day of menstrual bleeding.) Repeat this dosage schedule for each cycle. 2. If no menstrual period occurs after a cycle of treatment (20 tablets) in which patient adhered to the schedule, the patient must be instructed to resume taking the Norinyl-1 tablets 7 days after the previous 20-day course was completed. For example, if the last pill of a previous cycle had been taken on a Sunday, then a new cycle of treatment should begin on the following Sunday. 3. In the postpartum woman, it is recommended that the first cycle of treatment should begin on day 5 of the first menstrual cycle. However, Norinyl-1 should not be administered during lactation.

Availability: Norinyl-1 (norethindrone 1 mg. with mestranol 0.05 mg.)—Dispensers of 20 and 60 and bottles of 250 tablets.

norethindrone — an original steroid from

SYNTEX

LABORATORIES INC., PALO ALTO, CALIF.

In peptic ulcer... antacid therapy with a new benefit



CONTAINS A BALANCED COMBINATION OF THE MOST WIDELY USED ANTACIDS— FOR RAPID NEUTRALIZATION. PLUS SIMETHICONE— TO CONTROL THE FACTOR WHICH ANTACIDS ALONE CANNOT INFLUENCE.

Mylanta®

- In Mylanta, aluminum and magnesium hydroxides are balanced to minimize the chance of constipation or laxation and still achieve rapid acid neutralization and pain relief.
- The positive action of simethicone helps relieve the painful gas symptoms which often accompany the peptic ulcer syndrome.
- The nonfatiguing flavor and smooth, nongritty consistency of tablets and liquid encourage continued patient cooperation during long-term therapy.

Composition: Each Mylanta chewable tablet or teaspoonful (5 ml.) of liquid contains: magnesium hydroxide, 200 mg.; aluminum hydroxide, dried gel, 200 mg.; simethicone, 20 mg. **Dosage:** one or two tablets, well chewed or allowed to dissolve in the mouth, or one or two teaspoonfuls of liquid to be taken between meals and at bedtime.

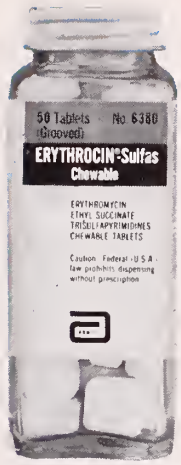
The Stuart Company, Pasadena, California
Division of Atlas Chemical Industries, Inc.

Stuart



Perhaps there have been times when you wanted to prescribe erythromycin and triple sulfas for little patients. Now you can—with a choice of two new fine-tasting pediatric forms.

New– Two Pediatric Forms of Erythromycin and Triple Sulfas





ERYTHROCIN®-SULFAS Chewable (Erythromycin ethyl succinate-trisulfapyrimidines chewable tablet)

In clinical trials[1,2], this orange-flavored tablet was given to 55 patients, aged four months to 18 years.

Diagnoses (multiple in some cases) represented a cross section of bacterial infections commonly seen in pediatric office practice.

Therapy was given from three to 12 days, with an average of six days.

Of the 55 patients, 30 were reported cured within 72 hours, while 22 showed partial recovery within the same time, and subsequent clinical cure.

A clinical cure rate of 94.5%

ERYTHROCIN®-SULFAS Granules (Erythromycin ethyl succinate-trisulfapyrimidines granules for oral suspension)

87 patients were treated[1,2]—all children, ages four months to 15 years.

The diagnoses were multiple in some cases and were chiefly bacterial infections of the respiratory tract.

Dosage was maintained from three to 10 days; average treatment was five days. All of the ill children accepted the orange-flavored suspension favorably.

53 were clinically cured within 72 hours, while 32 showed partial relief within the same time, and subsequent clinical cure.

701358

A clinical cure rate of 97.7%

1. Case Reports on File, Dept. Clin. Development, Abbott Laboratories.
2. Polley, R.F.L., Use of Erythromycin-Sulfas in Office Practice, Western Med., 7:177, July, 1966.

ABBOTT

Brief Summary on next page

ERYTHROCIN®-SULFAS
Brief Summary

Contraindications: Known sensitivity to erythromycin or sulfonamides. Because of the possibility of kernicterus with sulfonamides, do not use in pregnancy at term, premature or newborn infants.

Warnings: As with other forms of sulfonamide therapy, carefully evaluate patients with liver or kidney damage, urinary obstruction, or blood dyscrasia. Deaths have been reported from hypersensitivity reactions and blood dyscrasias following use of sulfonamides. Perform blood counts and liver and kidney function tests if used repeatedly at close intervals or for long periods.

Precautions, Side Effects: Occasionally mild abdominal discomfort, nausea or vomiting may occur with erythromycin, generally controlled by reduction of dosage. Mild allergic reactions (such as urticaria and other skin rashes) may occur. Serious allergic reactions have been extremely infrequent. Use sulfonamides with caution in patients with a history of allergy. Assure adequate fluid intake to prevent crystalluria and institute alkali therapy if indicated. If overgrowth of nonsusceptible organisms occurs, withdraw the drug and institute appropriate treatment. If a patient should show signs of hypersensitivity, appropriate countermeasures (e.g. epinephrine, steriods, etc.) should be administered and the drug withdrawn.

Adverse Reactions: Sulfonamide therapy may be associated with headache, nausea, vomiting, urticaria, diarrhea, hepatitis, pancreatitis, blood dyscrasias, neuropathy, drug fever, skin rash, injection of the conjunctiva and sclera, petechiae, purpura, hematuria and crystalluria.

Side effects due to erythromycin are infrequent, but occasional abdominal discomfort, nausea, or vomiting, urticaria and other skin rashes may occur.

Supplied: The Granules for Oral Suspension come in bottles of 60 ml. and 150 ml. The Chewable tablets are in bottles of 50. Each 5-ml. teaspoonful of reconstituted Granules or each Chewable tablet provides erythromycin ethyl succinate equivalent to 125 mg. of erythromycin activity and 167 mg. of each of sulfadiazine, sulfamerazine and sulfamethazine.

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Tandearil®
oxyphenbutazone

Therapeutic Effects: Tandearil is a nonhormonal compound which may rapidly resolve inflammation and help restore normal joint function. Its action does not affect pituitary-adrenal function or impair immune responses. Its value in osteoarthritis is especially noteworthy because this disorder responds inconsistently to steroids and is often resistant to salicylates. Further, indomethacin is limited only to osteoarthritis of the hip, whereas oxyphenbutazone is effective in all forms of the disease.

Contraindications: Edema; danger of cardiac decompensation; history or symptoms of peptic ulcer; renal, hepatic or cardiac damage; history of drug allergy; history of blood dyscrasia. The drug should not be given when the patient is senile or when other potent drugs are given concurrently.

Warning: If coumarin-type anticoagulants are given simultaneously, watch for excessive increase in prothrombin time. Pyrazole compounds may potentiate the pharmacologic action of sulfonylurea, sulfonamide-type agents and insulin. Carefully observe patients receiving such therapy. Use with great caution in the first trimester of pregnancy.

Precautions: Obtain a detailed history and a complete physical and laboratory examination, including a blood count. The patient should be closely supervised and should be warned to report immediately fever, sore throat, or mouth lesions (symptoms of blood dyscrasia); sudden weight gain (water retention); skin reactions; black or tarry stools or other evidence of intestinal hemorrhage. Make regular blood counts. Discontinue the drug and institute countermeasures if the white count changes significantly, granulocytes decrease, or immature forms appear. Use greater care in the elderly and in hypertensives.

Adverse Reactions: The most common are nausea, edema and drug rash. The drug has been associated with peptic ulcer and may reactivate a latent peptic ulcer. Infrequently, agranulocytosis, or a generalized allergic reaction may occur and require withdrawal of medication. Stomatitis, salivary gland enlargement, vomiting, vertigo and languor may occur. Leukemia and leukemoid reactions have been reported but cannot definitely be attributed to the drug. Thrombocytopenic purpura and aplastic anemia may occur. Confusional states, agitation, headache, blurred vision, optic neuritis and transient hearing loss have been reported, as have hyperglycemia, hepatitis, jaundice, and several cases of anuria and hematuria. With long-term use, reversible thyroid hyperplasia may occur infrequently. Moderate lowering of the red cell count due to hemodilution may occur.

Dosage in Osteoarthritis: The initial daily dosage in adults is 300-600 mg. in divided daily doses. When improvement occurs, dosage should be decreased to the minimum effective level; this should not exceed 400 mg. daily, and is often achieved with only 100-200 mg. daily.

For complete details, please refer to full prescribing information. 6562-VI(B)R

Availability: Tablets of 100 mg.

Geigy

Geigy Pharmaceuticals
Division of Geigy Chemical Corporation
Ardsley, New York

Geigy

Tandearil®
oxyphenbutazone

helps osteoarthritic joints move again



3 out of 4 osteoarthritics completely or markedly improved

Sperling, I.L.: 3 Years' Experience with Oxyphenbutazone in the Treatment of Rheumatic Disorders, Applied Therapeutics 6:117, 1964.	76.9% of 407 patients
Watts, T.W., Jr.: Treatment of Rheumatoid Disorders with Oxyphenbutazone, Clin. Med. 73:65, 1966.	84.6% of 39 patients

Please see adjoining page for brief prescribing summary

TA-4919 PC

Against these three major pathogens…



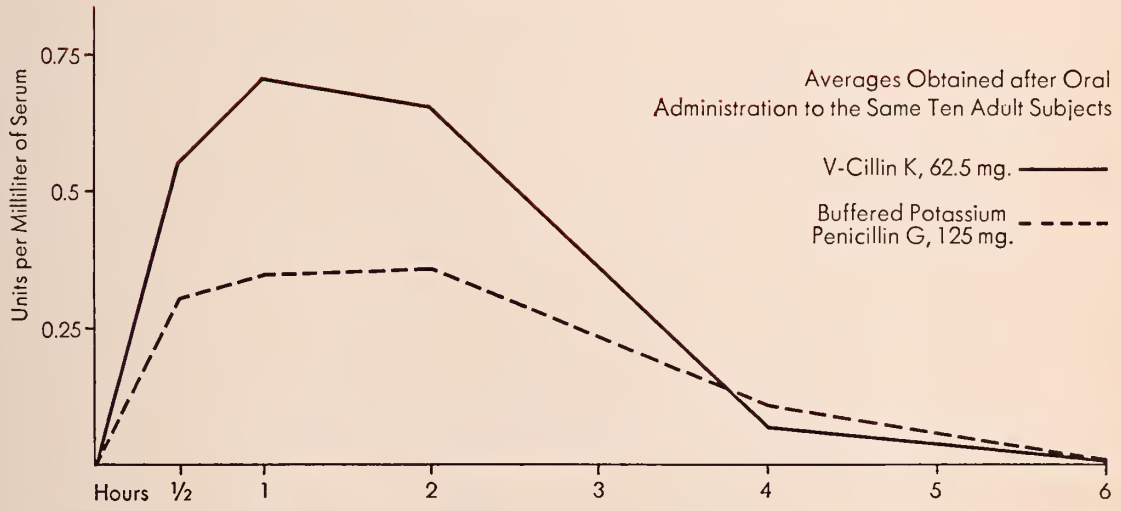
V-Cillin K® provides dependable oral antibacterial activity

because it combines a high degree of in-vitro activity...

Antibiotic	Staph. Aureus (Penicillin-Sensitive) MIC (mcg./ml.) Median	Range	Streptococcus, Group A MIC (mcg./ml.) Median	Range	Diplococcus Pneumoniae MIC (mcg./ml.) Median	Range
Penicillin V	0.02	0.02-0.04	0.02	0.003-0.4	0.01	0.005-0.2
Penicillin G	0.02	0.005-1.6	0.005	0.002-0.2	0.02	0.01-0.1
Methicillin	1.6	0.4-6.3	0.2	0.1-0.4	0.2	0.1-1.6
Oxacillin	0.4	0.1-3.1	0.04	0.02-0.4	0.1	0.04-0.8
Cloxacillin	0.2	0.2-0.8	0.1	0.1-0.8	—	—
Nafcillin	0.4	0.2-0.8	0.04	0.02-0.1	0.02	0.02-0.2
Ampicillin	0.2	0.1-0.8	0.02	0.01-0.04	0.02	0.01-0.04

Adapted from Klein, J. O., and Finland, M.: New England J. Med., 269:1019, 1963.

with high blood levels, even in the presence of food



Adapted from Griffith, R. S., and Black, H. R.: Current Ther. Res., 6 253, 1964.

V-Cillin K® Lilly 700636

Potassium Phenoxymethyl Penicillin

(See next page for prescribing informatio

New 500 mg. tablets...a more convenient way to give high doses



Description: V-Cillin K is the potassium salt of V-Cillin® (phenoxymethyl penicillin, Lilly). This chemically improved form combines acid stability with immediate solubility and rapid absorption. Higher serum levels are obtained more rapidly with this penicillin than with equal oral doses of penicillin G. The higher serum levels and acid stability of V-Cillin K make it a more dependable penicillin for oral use.

V-Cillin K, Pediatric, is an oral solution of clinically proved V-Cillin K in teaspoon dosage form. When mixed as directed, each 5 cc. (approximately one teaspoonful) will contain 125 mg. (200,000 units) phenoxymethyl penicillin as the potassium salt.

Indications: V-Cillin K has been shown to be effective in the treatment of streptococcus, pneumococcus, and gonococcus infections as well as infections caused by sensitive strains of staphylococci. It may be used for the prophylaxis of streptococcus infections in patients with a history of rheumatic fever and for the prevention of bacterial endocarditis after tonsillectomy and tooth extraction in those patients with a history of rheumatic fever or congenital heart disease.

Contraindication: V-Cillin K should not be administered to a patient with a history of penicillin hypersensitivity.

Warnings: In rare instances, the use of penicillin may cause acute anaphylaxis which may prove fatal unless promptly controlled. This type of reaction appears more frequently in patients with a history of sensitivity reactions to penicillin and in those with bronchial asthma or other allergies. Resuscitative drugs should be readily available for emergency administration. These include epinephrine and pressor drugs (as well as oxygen for inhalation) for relief of immediate allergic manifestations and antihistamines and corticosteroids for delayed effects.

Precautions: V-Cillin K should be used cautiously, if at all, in a patient with a strongly positive history of allergy.

In prolonged therapy with penicillin, and particularly with high parenteral dosage schedules, frequent evaluation of the renal and hematopoietic systems is recommended.

In suspected staphylococcus infections, proper laboratory studies (including sensitivity tests) should be performed.

The use of penicillin may be associated with the overgrowth of pencillin-insensitive organisms. In such cases, its administration should be discontinued, and appropriate measures should be taken.

Adverse Reactions: Although serious allergic reactions are much less common with administration of oral penicillin than with intramuscular forms, manifestations of penicillin allergy may occur.

Penicillin is a substance of low toxicity, but it does possess a significant index of sensitization. The following hypersensitivity reactions associated with the use of penicillin have been reported: skin rashes ranging from maculopapular eruptions to exfoliative dermatitis; urticaria; and reactions resembling serum sickness, including chills, fever, edema, arthralgia, and prostration. Severe and often fatal anaphylaxis has occurred (see Warnings). Hemolytic anemia, leukopenia, thrombocytopenia, and nephropathy are rarely observed side-effects and are usually associated with high parenteral dosage.

Administration and Dosage: For Tablets V-Cillin K and for V-Cillin K, Pediatric, the usual dosage ranges from 125 mg. (200,000 units) three times a day to 500 mg. (800,000 units) every four hours. For infants, the daily dosage may be 50 mg. per Kg. of body weight divided into three doses.

Beta-hemolytic streptococcus infections without associated bacteremia may be treated with 200,000 to 400,0000 units three times a day. Therapy should be continued for a minimum of ten days to prevent development of rheumatic fever and/or other serious complications. Dosage for routine streptococcus prophylaxis in patients with a history of rheumatic fever or congenital heart disease may be 200,000 units once or twice daily. When such patients undergo tonsillectomy, tooth extraction, or other minor surgery, the prophylactic dose should be 500,000 units every six hours given two days prior to surgery and for two days postoperatively. If oral medication is not feasible on the day of surgery, parenteral therapy should be considered. Mild to moderately severe pneumococcus pneumonia has been treated effectively with 250 mg. every six hours.

In staphylococcus infections, 400,000 units or more should be given every six to eight hours in conjunction with indicated surgical procedures.

For gonorrhea in males, 500 mg. (800,000 units) every four hours for three doses may be employed; in females, 500 mg. every four hours for six doses are recommended. Refractory infections generally respond to a second treatment three to four days following completion of the first. Treatment of gonorrhea with severe complications should be individualized, with prolonged and intensive treatment. Patients with a suspected lesion of syphilis should have a dark-field examination before receiving penicillin and monthly serologic tests for a minimum of three months.

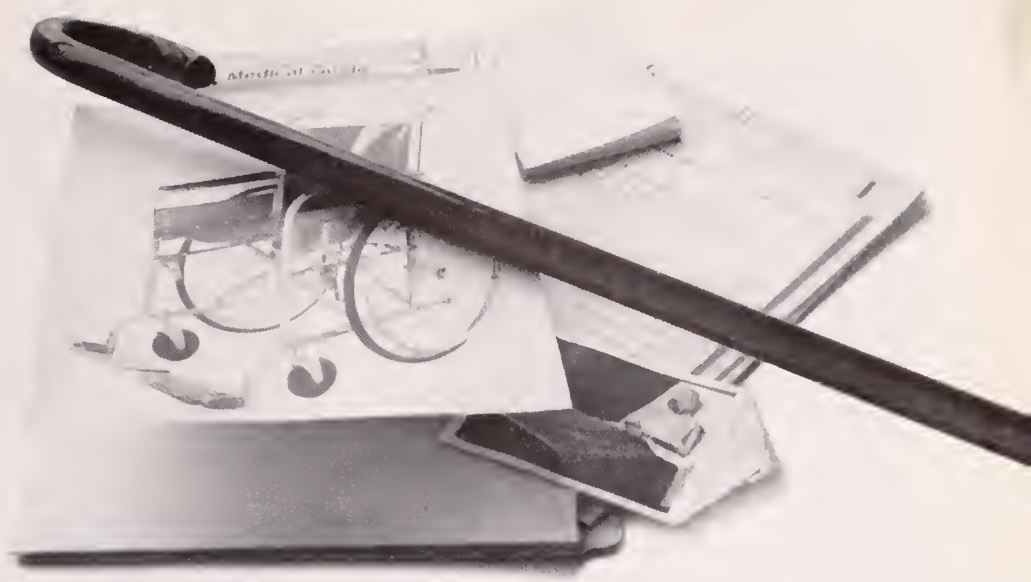
How Supplied: Tablets V-Cillin K, U.S.P., 125 mg. (200,000 units), in bottles of 50 and 100; and 250 mg. (400,0000 units) and 500 mg. (800,000 units), in bottles of 24 and 100.

V-Cillin K, Pediatric, for Oral Solution, 125 mg. (200,000 units) per 5 cc. of solution, in 40, 80, and 150-cc.-size packages. [032067]

Additional information available to physicians upon request. Eli Lilly and Company, Indianapolis, Indiana 46206.

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B and C vitamins are part of therapy: An imbalance of water-soluble vitamins and chronic illness often go hand in hand. STRESSCAPS capsules, containing therapeutic quantities of vitamins B and C, are formulated to meet the increased metabolic demands of patients with physiologic stress. In chronic illness, as with many stress conditions, STRESSCAPS vitamins are therapy.



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Each capsule contains:

Vitamin B_1 (as Thiamine Mononitrate)	10 mg
Vitamin B_2 (Riboflavin)	10 mg
Vitamin B_6 (Pyridoxine HCl)	2 mg
Vitamin B_{12} Crystalline	4 mcgm
Vitamin C (Ascorbic Acid)	300 mg
Niacinamide	100 mg
Calcium Pantothenate	20 mg

Recommended intake: Adults, 1 capsule daily, for the treatment of vitamin deficiencies. Supplied in decorative "reminder" jars of 30 and 100; bottles of 500.

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Each tablet or capsule contains
PHENOBARBITAL..... 16 mg.
(Warning: may be habit forming)
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Precaution: same as 16 mg. of phenobarbital



Constructive Therapy

A Solfoton tablet or capsule at 6 hour intervals maintains sedation at the threshold of calmness, sustaining a mental climate for purposeful living.

Literature and clinical samples sent upon request.

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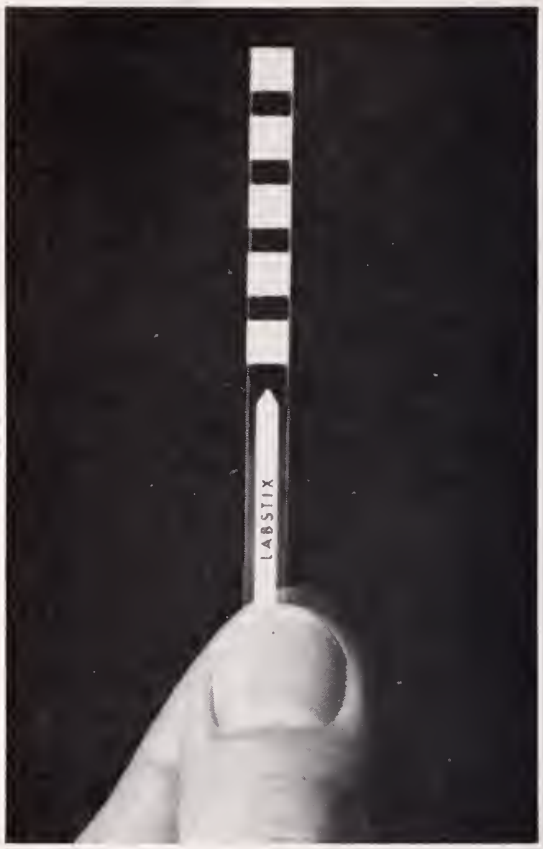
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100s, 500s, 5000s

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100s, 500s, 1000s

Solfoton S/C *(sugar-coated beige tablets)*
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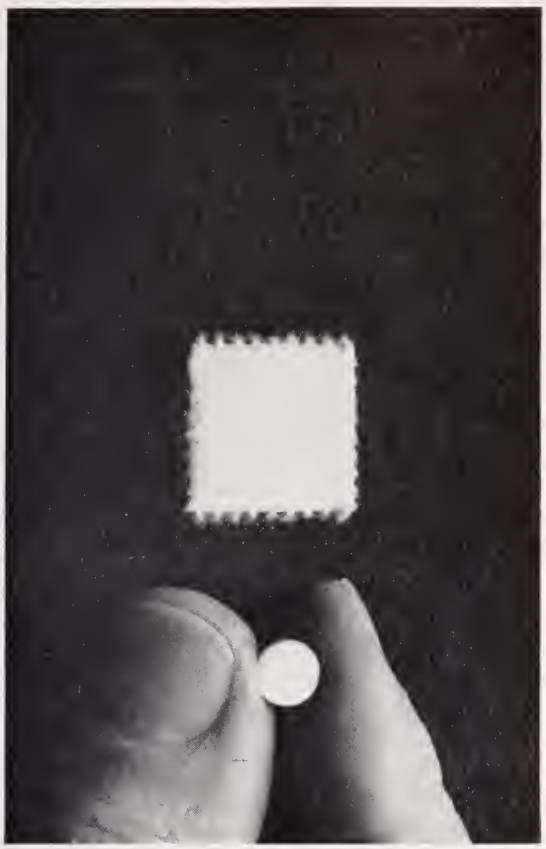
*Blood; ketones; glucose; protein, and pH.

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The fast-disintegrating uncoated tablet gives relief in 15 minutes

Each tablet contains:

Potassium Iodide	195 mg.
Aminophylline	130 mg.
Phenobarbital, Caution: May be habit forming	21 mg.
Ephedrine HCl	16 mg.

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Precautions: Usual for aminophylline-ephedrine-phenobarbital. Iodides may cause nausea, long use may cause goiter. Discontinue if symptoms of iodism develop.

Iodide contraindications: tuberculosis, pregnancy.

DOSAGE

One tablet, with full glass of water, 3 or 4 times daily.

Dispensed in bottles of 100 and 1000 tablets.

MUDRANE GG—Formula, dosage and package identical to Mudrane—*except*—100 mg. glyceryl guaiacolate replaces the potassium iodide. The value of Mudrane cannot be enjoyed by a small group in which K.I. is contraindicated. Mudrane GG is prepared for this group.

MUDRANE GG ELIXIR—Four 5 cc teaspoonfuls is equivalent to one Mudrane GG tablet. Dosage adjusted to age and weight of child. Mudrane GG Elixir is for pediatric patients and those who think they cannot swallow tablets. Dispensed in pint and half gallon bottles.

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A method so rapid and
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Results, read at 48 to 72 hours, are comparable
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ulceration, or necrosis at test site. Contraindications: none, but use with
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WARNINGS: Dosage of coadministered antihypertensive agents should be reduced by at least 50%. Use with caution in edema due to renal disease; advanced hepatic disease or suspected presence of electrolyte imbalance. Stenosis or ulcer of small intestine have been reported with coated potassium formulas and should be administered only when indicated. Until further clinical experience is obtained, the use of the drug in pregnant patients should be carefully weighed against possible hazards to the fetus.

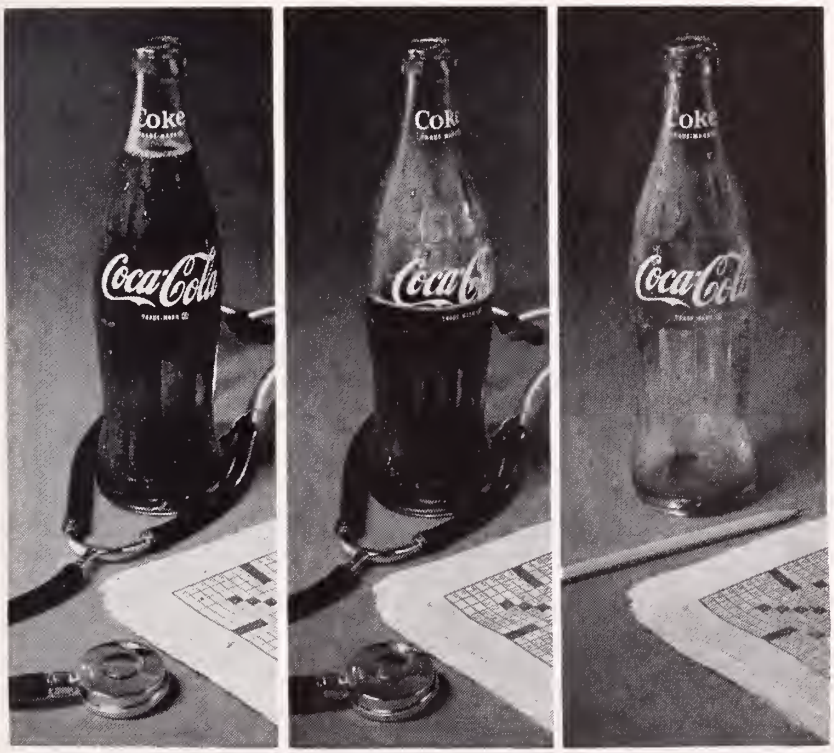
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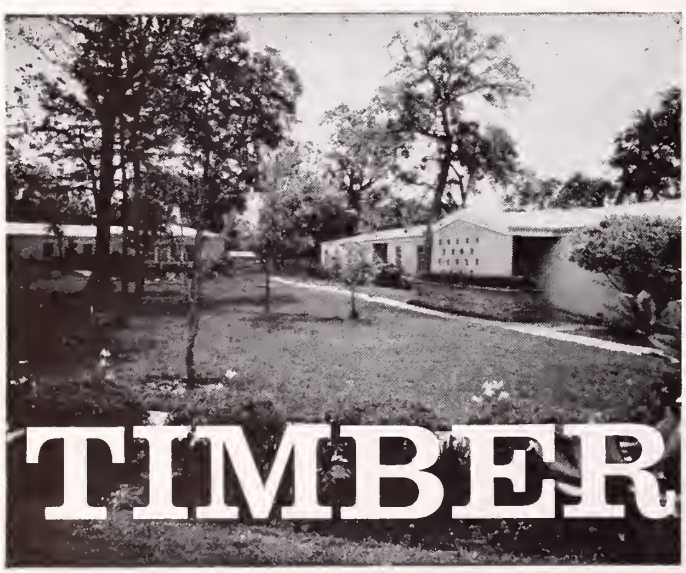
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If his emotional symptoms persist in the face of your counsel and reassurance, you may want to consider adjunctive use of SERAX (oxazepam). It is indicated in anxiety, tension, agitation, irritability, and anxiety associated with depression. May be used in a broad range of patients, usually with considerable dosage flexibility.

When prescribing, carefully observe dosage recommendations and appropriate precautions, especially as pertaining to the elderly and when complications could ensue from a fall in blood pressure. (See Wyeth literature or PDR as well as "IN BRIEF" below.)

IN BRIEF.

Contraindications: History of previous hypersensitivity to oxazepam. Oxazepam is not indicated in psychoses.

Precautions: Hypotensive reactions are rare, but use with caution where complications could ensue from a fall in blood pressure, especially in the elderly. Withdrawal symptoms upon discontinuation have been noted in some patients exhibiting drug dependence through chronic overdose. Carefully supervise dose and amounts prescribed, especially for patients prone to overdose; excessive, prolonged use in susceptible patients (alcoholics, ex-addicts, etc.) may result in dependence or habituation. Reduce dosage gradually after prolonged excessive dosage to avoid possible epileptiform seizures. Withdrawal symptoms following abrupt discontinuance are similar to those seen with barbiturates. Caution patients against driving or operating machinery until absence of drowsiness or dizziness is ascertained. Warn patients of possible reduction in alcohol tolerance. Safety for use in pregnancy has not been established.

Not indicated in children under 6 years; absolute dosage for 6- to 12-year-olds not established.

Side Effects: Therapy-interrupting side effects are rare. Transient mild drowsiness is common initially; if persistent, reduce dosage. Dizziness, vertigo and headache have also occurred infrequently; syncope, rarely. Mild paradoxical reactions (excitement, stimulation of affect) are reported in psychiatric patients. Minor diffuse rashes (morbilliform, urticarial and maculopapular) are rare. Nausea, lethargy, edema, slurred speech, tremor and altered libido are rare and generally controllable by dosage reduction. Although rare, leucopenia and hepatic dysfunction including jaundice have been reported during therapy. Periodic blood counts and liver function tests are advised. Ataxia, reported rarely, does not appear related to dose or age. These side reactions, noted with related compounds, are not yet reported: paradoxical excitation with severe rage reactions, hallucinations, menstrual irregularities, change in EEG pattern, blood dyscrasias (including agranulocytosis), blurred vision, diplopia, incontinence, stupor, disorientation, fever and euphoria.

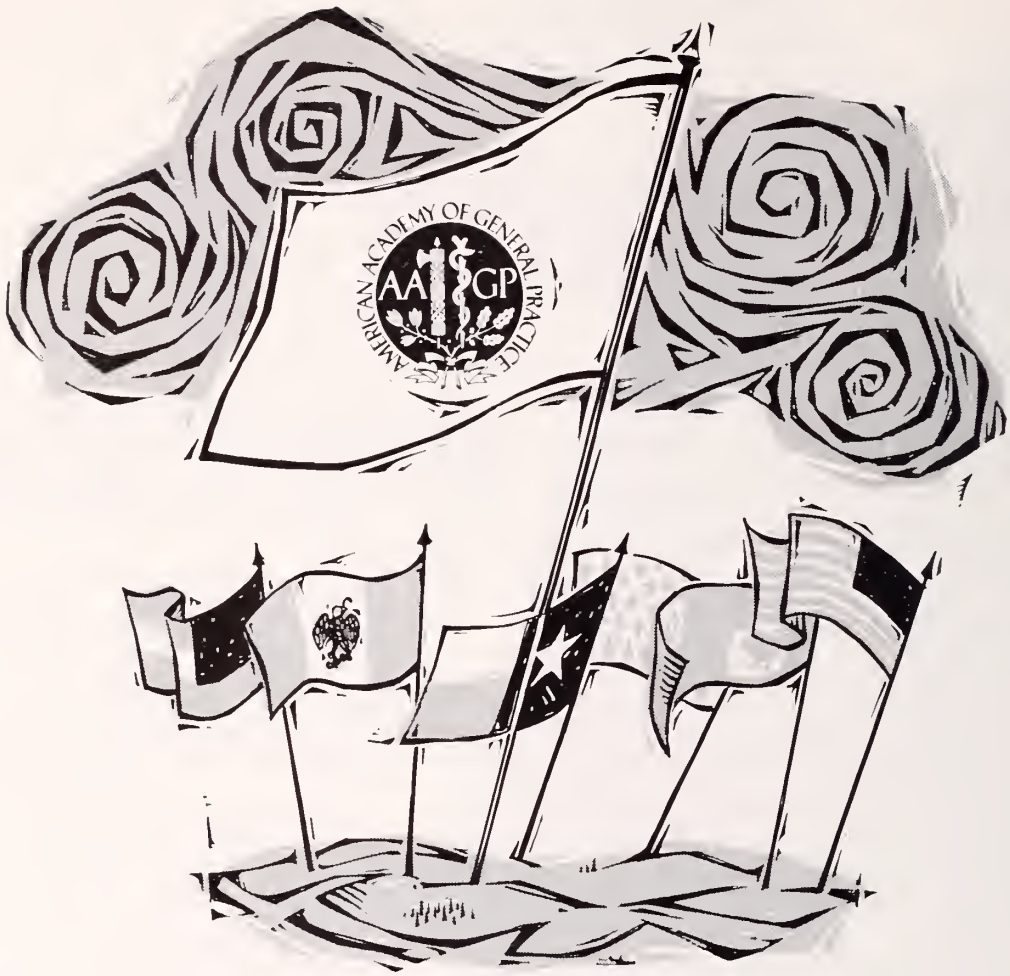
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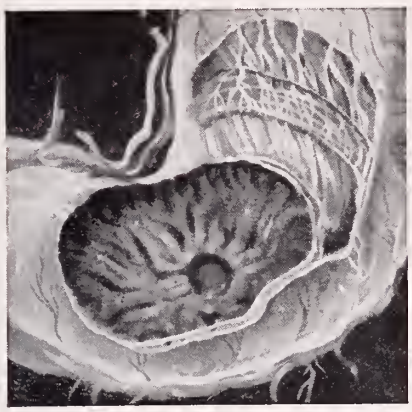


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What the Social Security Disability Program Means To You and Your Patients

ADVISING PATIENTS

Where do I send a patient to inquire about disability benefits?

Refer him to his social security office. If he cannot get there because he is hospitalized or is unable to leave home, the office will send a representative to visit him.

What do you mean by "disabled?"

A "disabled" person is one who has a physical or mental impairment that prevents him from doing not only his usual work, but any substantial work in keeping with his age, education, and experience. (Several provisions apply to a totally blind person: For instance, even if he is able to work, he can have his social security earnings record "frozen" to protect his future benefit rights; also, if he is 55 or over, he may qualify under a special definition of disability. For further information, inquire at a social security office.)

Is the impairment the only factor in determining disability?

Not always. Although a person is considered disabled only if his impairment is the primary reason he can't work, consideration may also be given to such factors as age, education, training and work experience.

In most cases, a person who is found disabled has an impairment so severe that his condition alone shows he cannot work. But it is possible for a person to be considered disabled because of a combination of medical and vocational considerations. This occurs when the medical condition prevents him from doing his usual work and—considering his age, education, and previous work experience—he cannot be expected to do any other type of work.

Are benefits paid only in cases of permanent disability?

No. Benefits are paid if the disability has lasted or is expected to last at least 12 months or to result in death. This covers nonpermanent impairments resulting from accident or illness as well as chronic conditions.

How soon can benefits start?

Benefits begin after a waiting period of six full calendar months following the onset of disability. Therefore, the first payment is for the seventh month after the month in which a person became disabled.

What about a person who did not apply for benefits while he was still disabled? Can he receive back payments now that he is recovered?

Yes. Even a person who has returned to work may be eligible for some benefits if severe disability prevented him from working for at least 12 months. However, the longer the delay between his recovery and his application for benefits, the fewer months of back payments he can receive. If more than 14 months elapse after he recovers and before he applies, no benefits are payable.

A cardiac patient who has angina on slight exertion tells me you turned down his claim. Why?

Probably for a non-disability reason, such as his not having worked long enough in jobs covered by social security to meet the disability earnings requirement. To acquire disability protection, a worker must generally have social security work credits for at least five of the ten years preceding the onset of his disability. (Note: Persons disabled by blindness before age 31 may need less than five years. Inquire at a social security office for further information.)

- In 1965, social security coverage was extended to physicians in private practice. Its disability protection can be a valuable supplement to your present disability coverage.
- In the social security disability program, a person under 65 who is physically or mentally too disabled to work may receive up to $152 in monthly benefits. If he has dependents, family benefits can go as high as $339 a month.
- Benefits now can be paid to a person whose disability has lasted or is expected to last 12 months or longer, or to result in

death. (Formerly, a person was eligible only if his impairment was expected to continue for a long and indefinite time or to result in death.) This liberalized provision benefits a large number of persons disabled by nonpermanent impairments resulting from accident or illness.

• Already, in Oklahoma, some 17,410 disabled persons and 15,898 dependents are receiving about $2.2 million monthly in social security disability benefits. Nationwide, over a million disabled persons—plus about a million dependents — are receiving payments of about $1.75 billion annually from the program.

You may have patients who are missing out on benefits because they are not aware of the provisions of the law. You can perform a valuable service for them in this regard. If there is any possibility that they are eligible for these benefits, refer them to a social security office for further information. You can also help speed the decision on your patient's claim by promptly responding to his request to report the medical data from your records needed to evaluate his disability.

Here, to give you a better understanding of how the program relates to your practice, are answers to the questions physicians most frequently ask about the social security disability program.

What are the most common impairments among workers who are found disabled?

The most frequent causes of disability have been: Arteriosclerotic heart disease (including coronary disease), emphysema, schizophrenic disorders, hypertensive heart disease, pulmonary tuberculosis, osteoarthritis and rheumatoid arthritis. These conditions may help you identify patients likely to be qualified for benefits. But don't feel that they limit you in any way. Send any patient you think may qualify to his nearest social security office.

How about someone who has never been able to work—someone disabled since birth, for instance?

Under the "childhood disability" provisions. a person continuously disabled since before age 18 can receive disability benefits starting at age 18 or later. He need not have a work record of his own. Benefits are based on the earnings record of either parent. Payments begin when a parent covered under social security dies or becomes entitled to disability or retirement benefits. Benefits may continue as long as the son or daughter remains disabled.

The most common causes of disability in this program are mental retardation, epilepsy, cerebral palsy, congenital defects, and late effects of acute poliomyelitis, congenital syphilis and acute encephalitis.

THE DISABILITY DECISION

Who determines whether or not a person is disabled?

Disability decisions are made by an evaluation team consisting of a physician and a counselor skilled in vocational evaluation. The team works in an agency of the state in which the applicant lives—in Oklahoma, at the Disability Insurance Unit, Department of Public Welfare.

Typically, the evaluating physician is engaged in private practice serving the agency on a part-time basis. He reviews the medical, hospital and laboratory reports and, in conjunction with the vocational evaluator, decides whether the applicant's impairment is disabling under the law.

Does the State agency physician also examine the applicant?

No. He depends entirely on the evidence reported by you and others who have examined or treated the applicant.

Can a person appeal the denial of his claim?

Yes. He is entitled to have his claim reconsidered, submitting any new evidence that may be available. If his claim again is disallowed, he can have it ruled on by a hearing examiner located near his home. As a further appeal, the claimant can request that the decision in his case be reviewed in Washington, D.C., by the Appeals Council of the Bureau of Hearings and Appeals. Then if he is still dissatisfied, he can file suit in his local U.S. District Court to have the decision reviewed.

REPORTING MEDICAL EVIDENCE

What kind of medical report on my patient should I submit?

Submit a standard narrative report, such as you would send any colleague to give a complete medical picture of the patient. This should include the history, and physical and laboratory findings—as much objective data from the patient's chart as possible.

Who pays for my report?

Your patient is legally responsible for providing initial medical evidence to support his claim. Therefore, he is responsible for any fee you charge for preparing your report.

Is the initial report from the treating physician all the medical information that the State agency needs to decide a case?

In many cases, yes. Frequently, reports from other treatment sources such as hospitals and clinics are used also. If the evaluating physician requires certain data that was not reported, he may call or write you to determine if you have the needed information in your records.

Suppose I don't have it?

Then the evaluating physician may ask if you wish to provide the information by performing tests or an examination for a fee paid by the Government. Or he may obtain the information by sending the applicant to an independent medical source for examination.

Who are these independent sources?

Generally, they are other physicians in private practice. Any qualified physician may ask the State agency to place his name on its consultant roster to perform examinations.

How are the consultants' fees determined?

The fees are based on a schedule which the agency has worked out with the Medical Advisory Committee to the Department of Public Welfare.

MOTIVATING REHABILITATION

What is done for applicants who need rehabilitation help?

Every Oklahoma patient applying for benefits is considered for possible services by the State Vocational Rehabilitation Division. Such services include counseling, teaching of new employment skills, training in the use of prostheses, and job placement. These services are generally financed from State-Federal appropriations. Additional resources are now provided through social security funds to pay the costs of rehabilitating certain disability beneficiaries.

Do benefits stop when a beneficiary who has not recovered goes back to work?

Generally, not right away. A person who tries to work *despite his medical disability* is usually given a "trial work period" of 12 months of continued benefits.

This helps reassure a person who might hesitate to go back to work for fear of losing his benefits before he knows whether he can hold a steady job. Benefits are stopped at the end of the trial work period only if the beneficiary has shown that he has regained his ability to do substantial gainful work.

What happens when a beneficiary recovers medically?

His monthly benefit checks are continued for the month of recovery and two additional months. This is to help him adjust financially to being self-sufficient. Then, since he is no longer disabled, his benefits cease.

To be sure that beneficiaries continue to qualify for benefits, there are periodic reviews of all cases in which recovery is believed possible.

Does a person who has recovered or returned to work get special consideration if he becomes disabled again?

Yes. If he again becomes disabled within five years, the six-month waiting period normally required before benefits begin is waived He is immediately re-entitled to benefits, so long as he is still insured for disability purposes.

SOCIAL SECURITY DISABILITY PROVISIONS AT A GLANCE

- Benefits go to disabled workers under 65 and their dependents.
- A worker is considered disabled if a physical or mental impairment prevents him from doing any substantial gainful work in keeping with his age, education, and work experience.
- Benefits are payable if the disability has lasted or is expected to last 12 months or longer or to result in death.
- To acquire disability protection, a person needs to have worked under social security a certain length of time.

(Continued on page 476)



The high quality of our AMA leadership is aptly demonstrated by the speeches of President Charles L. Hudson, M.D., and President-Elect Milford O. Rouse, M.D., at the June AMA convention in Atlantic City. These remarks are reprinted in the July 17th issue of the JAMA. Every member of the AMA and especially every member in Oklahoma should take time to read and digest their thoughts. Not only is high quality leadership shown, but many of the criticisms of the AMA, which we hear constantly from all sides, are belied by their words.

I am taking the liberty of reprinting here some excerpts from these speeches. These excerpts are not, naturally, the "whole meat." However, they are parts which seem to me to need emphasis.

Doctor Hudson says:[1]

"My proposal to the House of Delegates at the clinical convention last year, to encourage physicians to seek out and meet any discovered needs for health care, has been endorsed by the Board of Trustees, and staff assistance has been acquired. As it so frequently happens, legislation appropriating funds is implemented by regulations that determine how and where the money is to be spent.

"Using the neighborhood health center as an example of the selected design of the Office of Economic Opportunity program for the poor, I have been able to state, without unpleasantness, my preference for a more flexible design. I judge from these conversations that a better design coming from physicians would receive honest appraisal. I see this as a challenge for us to produce models of health care from conventional resources of the community—physicians' models—that will compete with governmental models for acceptance. I have spoken throughout the country along this line.

"I can hear you asking yourselves, 'What's wrong with the present model?' There may be nothing wrong. What I am suggesting is an evaluation because, as I will point out in a moment, the present model is said by others to be inadequate—inadequate not so much in the quality of an individual's service as in availability, comprehensiveness, and form of delivery.

"We may ignore this challenge and do nothing because we are free to do so. We may search for unmet needs and find none. We may choose to ignore discoverable needs or we may take up the challenge. In meeting physicians, I have seen examples of all four possible responses. Perhaps the most predominant response is a lack of comprehension. Fortunately, however, there are a few physicians who provide a spark that can catalyze a whole society into purposeful action."

Surely these lines reflect a thoughtful forward-looking attitude. Can anyone read these words and believe that they represent the thinking of a reactionary, narrow-minded group?

Concerning American medicine, Doctor Hudson has this to say:

"I have been motivated by a conviction that a service organization such as ours cannot survive unless it accommodates itself to the picture of society as it is today. We must identify ourselves with that society so well that it will instinctively turn to us for guidance in health affairs, with confidence that we will satisfy its needs and demands. But we must be sensitive to those needs and demands, and better still, anticipate them. To do this we need new ideas, imagination, invention, and innovation.

"These entities are products of free minds. They do not flourish under qualification and

(Continued on page 477)

[1]Hudson, Charles L., M.D., Remarks of the President, JAMA 201: 165-168 (July 17) 1967.

OSMA JOURNAL/scientific

Tranquilizers, Major and Minor

K. D. CHARALAMPOUS, M.D.

The therapeutic modality of the tranquilizers becomes increasingly important with the new emphasis for the treatment of the mentally ill in the community. A comprehensive discussion of these drugs is timely.

THE INTRODUCTION of the tranquilizers to clinical practice is unquestionably a tangible and significant contribution of modern psychiatry.

It is almost 14 years since the main tranquilizers became available, but there is still a great deal of controversy concerning their effectiveness, method of use, mode of action and toxicity. This may be because they have a broad spectrum of pharmacological activity and a formidable array of side effects. The introduction of a factor of such complexity in the specialty of psychiatry noted for the prevalence of hypothetical beliefs may be another reason. The assessment of the relative importance of the tranquilizers in the care of the mentally ill has become more difficult by their introduction at a time when the conscience of the public at large was awakened in recognizing the shortcomings related to their care. Besides there are those who insist in identifying and bestowing greater virtues on one therapeutic modality over another. They consider the psychotherapeutic treatment itself an ideal, aiming at the root of the problem and pharmacotherapy a superficial approach aiming at the symptoms. We follow an eclectic approach in treatment applications. The remark of Adolph Meyer of 1908 is still timely. "Let us remember," he said, "that psychiatry consists in what we have learned to do with the patient, and only in a secondary way with theoretical issues." In the literature one may find data to support any notion but we base our remarks on our personal experience with these drugs, striving not for a consensus but for consistency.

The tranquilizers are divided in two groups: (a) major tranquilizers, useful in the treatment of the psychoses except the depressive kind; (b) minor tranquilizers, useful in the treatment of the symptom-complex of anxiety that characterizes neurotic disorders.

In the group of major tranquilizers the first member family is that of rauwolfias

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with reserpine—Serpasil—as an example. Their slow onset of action and considerable incidence of side effects has diminished their role in psychiatry delegating their use for only those patients who have adverse sensitivity to the other classes of major tranquilizers. The newer addition to the major tranquilizers is that of butyrophenones. We have not found them to have any unique properties and the high incidence of extrapyramidal side effects did not make them particularly acceptable to the majority of our patients.

The backbone of the major tranquilizers is the family of phenothiazines. The well-known chemical structure of the three rings with a sulphur atom in position five and a nitrogen in position ten with radicals in positions two and ten, is easily accessible to molecular manipulation. This facility has permitted the marketing of more than a dozen phenothiazine tranquilizers to the confusion of the practitioner and his patients. The concensus at this time is that any phenothiazine tranquilizer in equivalent dosage is as effective in the treatment of mental disorders as any other. The selection is usually based on the kind and incidence of side effects for a particular patient. A patient prone to develop marked disturbance of his ejaculatory function with thioridazine could well be a candidate for trifluoperazine. Sometimes individual properties of a phenothiazine might favor its use on a particular patient. The sedative effect of chlorpromazine could make it desirable for an agitated patient, while this property might be undesirable for a student on prolonged maintenance, who might do better on trifluoperazine. Familiarity with all available phenothiazines does not seem practical. Experience in depth with one representative from each sub-group of phenothiazines is desirable. The phenothiazines, based on the type of radical of position ten, are subclassified in three groups: Aliphatic, piperidine and piperazine. We have chosen chlorpromazine—Thorazine—, thioridazine—Mellaril—and trifluoperazine—Stelazine—as the representatives of each group respectively.

The importance of any of these drugs in the treatment of psychoses like those associated with the group of schizophrenias and acute and chronic brain syndromes is established. To these diagnostic categories may be added manic depressive psychosis, manic type. For the depressive type, phenothiazines are contraindicated since they may deepen the depression of a particular patient. For the psychotically depressed, electroshock therapy still remains the treatment of choice.

To indicate the method of use for a drug like Thorazine is a formidable task, as it could be effective on a single dose of 25 mg for one patient and absolutely necessary on a level of 2,000 mg daily for months for another. Individual titration for every patient should always be considered necessary. Moreover, a larger rather than a smaller dose appears indicated for the treatment of a patient with schizophrenia. Starting with a small amount we prefer to rapidly increase the dose to a level felt to be safe but sufficiently large. In agreement with the method followed by Kinross-Wright (1955), in using Thorazine, one could start with 50 mg every eight hours. This may be increased by 50 per cent of the previous daily dose every three to five days, reaching a level of 1600 mg daily. The same design one may follow with Mellaril but here the ceiling should be 800 mg daily, when chronic administration is anticipated, because of the danger of pigmentary retinopathy. If one were to choose Stelazine he could start with five mg every eight hours gradually increasing the daily dose to 40-60 mg. Above this level the intensity of the extrapyramidal side effects might give rise to fatalities. The level of 1600 mg daily for Thorazine should be maintained for four weeks. After this period, based on the modification of the target symptoms, which are usually the same as the secondary symptoms of schizophrenia described by Eugene Bleuler, one may decide to reduce the dose to the level of maintenance. This is usually the same or twice the starting dose. With Thorazine it is 50-100 mg every eight hours. A maintenance period of six to twelve months for a patient with acute schizophrenia is often desirable. For the patient, however, who has repeated exacerbations properly defined as chronic schizophrenia, indefinite maintenance on a phenothiazine should be considered like the

maintenance of a diabetic on insulin, a cardiac on digitalis or an epileptic on dilantin. Ninety-five per cent of acute schizophrenics show significant response to the phenothiazines but for patients with chronic schizophrenia one should expect some change in only about 75 per cent. No patient with chronic schizophrenia, even in the worst condition, should be given up without treatment first with 2,000 mg of Thorazine daily for at least six months.

In general, individualization of dosage focused on the target symptoms and reaching high levels for sufficiently long periods should be considered the approach for phenothiazine treatment. From the standpoint of tertiary prevention, chronic maintenance of schizophrenic patients on phenothiazines appears to be a most significant factor in the prevention of rehospitalization and in assisting the patient in responding to general efforts of rehabilitation.

Some experienced physicians often combine two phenothiazines. This preference supported by controlled investigations like that of Talbot (1964) cannot be recommended for wide use. It seems to us that for the beginning therapist, the titrating of the drug on the basis of symptoms, often difficult to elicit and observe, like those associated with mental disorders, would become more difficult. The incidence of side effects from one phenothiazine that might necessitate the change over to another could become prohibitive if one cannot delineate the causative agent. Furthermore, because of the limited knowledge of the action of these drugs in the body, of their metabolism and of how they affect other drugs, one may augment chances for side effects, some of them potentially dangerous, such as those following monoamineoxidase inhibitors and tricyclic antidepressants or tricyclics and benzodiazepines. Polypharmacy reminding one of the medieval theriacs might well be avoided. Although it might be thought by some as too optimistic to hope for identifying specific treatments for specific disorders in psychiatry, nevertheless, even with our present knowledge, it is much easier with one treatment at a time to teach the student, consult with a colleague, educate the patient and the nursing staff in identifying effects and side effects, and titrate the dose based on them.

The side effects resulting from the use of phenothiazines are numerous. Fortunately most of them are more annoying than dangerous. The autonomic side effects, such as mouth dryness, constipation, blurred vision, etc., often dissipate with the passage of time and usually reassurance suffices. If not, symptomatic treatment can eradicate them. Orthostatic hypotension needs attention, satisfactorily given by an alert and experienced nursing staff. Severe drop in blood pressure is certainly an emergency, like all forms of shock, and has to be treated with noradrenaline since phenothiazines are very adrenolytic. Difficulty with ejaculatory function should be recognized. Such recognition is dependent on the awareness of the physician since symptoms in the sexual area are not always discussed spontaneously. Central effects like weight gain, irregularity of menstrual function and lactation respond to drug reduction or discontinuance. The food intake should be given due attention.

The neurological side effects defined as extrapyramidal are most annoying and need recognition as well as prompt treatment. These side effects are divided in akathisia, dystonias and pharmacological parkinsonism. They respond well to anticholinergic drugs such as atropine, benztropine methanesulfonate and many others. Again, the dosage of the antiparkinsonian drugs should be titrated on the basis of target symptoms, in this case, the extrapyramidal side effects. At the most, only 40 per cent of patients treated with phenothiazines may develop extrapyramidal side effects. Antiparkin-

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sonian drugs are not only anticholinergic centrally but also peripherally. They give rise to dryness of the mouth, blurring of vision, dysuria, constipation, etc. Also, they have a narrow therapeutic margin. Often, a slightly higher dose than the effective dose may produce toxic delirium. For these reasons, the concurrent administration of antiparkinsonian drugs with phenothiazines routinely is not recommended. One should be also aware of the propensity of inexperienced nursing personnel to confuse anxiety and agitation with akathisia and the anxiety following it, often misapplying open orders "to be followed as necessary" including drugs like chlorpromazine and antiparkinsonian agents. Such open orders should be avoided. Other side effects such as pigmentary retinopathy may appear in susceptible individuals following the chronic administration of various phenothiazines. Thioridazine has been implicated in most instances. The pigmentary depositions give rise to "a salt and pepper" pattern on the retina following large dosages of thioridazine. If this development goes unchecked it may result in blindness. Periodic ophthalmoscopic examinations of patients given phenothiazines for long periods is warranted.

The side effects that may give rise to more serious conditions are the so-called allergic reactions. These are not dose related as such and it is felt that an element of individual susceptibility is necessary for their appearance. The first group is that of skin disorders. These may be various types of dermatitis necessitating discontinuation of the drug and often the administration of antihistamines. In addition, in climates with plentiful ultraviolet radiation photosensitivity may result. Alert nursing is needed to inform the patients of the dangers of exposure and see that they are protected. In this group of disorders one might include the cases presenting "skin and eye" symptoms, sometimes referred to as "purple people." The purple-gray discoloration of the skin following deposition of melanin together with phenothiazine metabolites is often accompanied by corneal opacities. Most elements of this condition recede after drug discontinuation. The second kind of allergic disorders concerns liver toxicity. This takes the form of cholestatic jaundice. It is reversible and sometimes may subside even while the phenothiazine treatment continues. Usually, the phenothiazine administration should be discontinued. The onset of jaundice is between the second and sixth weeks after the drug is begun. The incidence presently seems to be diminishing and as yet there is no certainty about the reason for the higher incidence in years past. According to reports in the literature, abnormal liver function studies associated with Thorazine are between 0.5 and five per cent. Good medical practice would recommend base-line liver function studies, such as serum bilirubin, alkaline phosphatase, SGOT and SGPT.

The third kind of allergic side effect is of much greater concern. The effects of phenothiazines on the hemopoietic system may be reflected in a variety of changes of the blood elements. Most of these are transient but sometimes agranulocytosis may occur. The reported incidence varies between 1:20,000 and 1:30,000. Most of them appear between the fourth and eighth weeks of phenothiazine treatment and seem to affect women more frequently. The mortality associated with such occurrences is quite high. Unfortunately hemograms, even if they are frequent, are not useful in identifying the danger which often appears precipitously. Signs such as fever, sore throat, etc., are useful for alerting the physician. Immediate discontinuation of the phenothiazine is indicated. Cross-sensitivity among phenothiazines, in reference to the hemopoietic system should not be overlooked.

The incidence of side effects, when considering the millions of patients treated with phenothiazines, does not seem to be out of proportion. The chance, however, that for some patients they may cause death would hardly recommend their use without valid rationale. Prescribing phenothiazines for the treatment of neuroses or for placebo effect is not justifiable.

The side effects following the use of phenothiazines are easily outweighed by their value in the treatment of chronic schizophrenic patients. Thirty-five per cent of the patients with this diagnosis, discharged on remission, are usually back in the hospital

in a matter of six months. This rises to 50 per cent in less than a year. The relapse rate drops to 14 per cent with maintenance on phenothiazines. In the clinic for follow-up care of chronic psychiatric patients at the Houston State Psychiatric Institute in Houston, Texas, where we utilized chronic drug maintenance, vocational rehabilitation efforts, together with frequent visiting by psychiatric nurses of the patients in their natural habitat, the relapse rate was only eight per cent in the year following discharge. In this clinic, a depot phenothiazine preparation, fluphenazine enanthate, was tested and found to be very useful for patients who cannot be trusted to take their own medicine. A single injection in a fat depot of 25 mg every two weeks appeared to be adequate maintenance for most patients. The only undesirable feature was the high incidence of extrapyramidal side effects, the same as with the parent compound fluphenazine. The necessity for taking antiparkinsonian drugs, one may suggest, negates the benefit from the infrequent administration of the phenothiazine. But the main concern is whether the patient is maintained on a phenothiazine or not. His willingness to take antiparkinsonian drugs, once extrapyramidal side effects have developed, does not present a problem. Nevertheless, the need for a clean, long-acting phenothiazine or an equivalent antipsychotic drug of different chemical structure persists.

The alleviation of anxiety has been a continuous effort of man at least since the beginning of recorded history. This effort does not seem to be diminishing in our times either. The high consumption of alcohol and barbiturates throughout the world attests to this.

One would hope that newer drugs, more specific, superseding the aforementioned, might have been developed. We do not feel this has happened as yet. A great number of drugs have been offered with many claims and considerable eclat. Some of these not only purport to alleviate the anxiety of humans but even the agitation and agony of caged beasts found in metropolitan zoos.

The description of the most popular classes of these drugs deserves mention if not for their therapeutic usefulness at least for their side effects. Their use for good or bad is singularly prevalent. One of the first groups of minor tranquilizers introduced is the diphenylmethanes. Azacyclonol - Frenquel - was ushered in with the claim that it was a potent antilysergic acid diethylamide agent and by extension an antianxiety one. With the exception of a few skin reactions, subsequent experience discounted the earlier claims. Another member of this family is benactyzine. Although benactyzine - Suavitil - was not used widely as such, it found a moderate public for its consumption after it was added to meprobamate and marketed under the name of Deprol. Deprol was offered as an antidepressant! Hydroxyzine - Atarax, Vistaril - another member of this group is more popular and with some justification. It is moderately antihistaminic, antipruritic, antiarrhythmic and sedative but it is also quite anticholinergic. It potentiates barbiturates and other hypnotics and may increase bleeding when the patient is on anticoagulants.

The second family of minor tranquilizers is that of propanediols. In this discussion these modified glycols are represented by meprobamate - Miltown, Equanil -. This drug has been marketed not only as an antianxiety agent but also as a muscle relaxant. It seems appropriate to echo the often quoted statement of the specialists that the muscle relaxant of import has yet to be discovered. Without getting involved in the argument of differences and similarities between barbiturates and meprobamate, our feeling is that this drug has been used far too much. Taking into account the great number of patients "treated" with meprobamate one might think that the cases reported with side effects such as the following are few indeed. This may be so, but they bear remembering. These are allergic skin eruptions, fever, fainting, bronchial spasm, paradoxical excitements, fatalities from idiosyncrasies, addiction, and withdrawal symptoms.

The third major group of minor tranquilizers is the benzodiazepines. This includes drugs such as chlordiazepoxide - Librium -, diazepam - Valium -, and oxazepam - Serax -. Drowsiness, weight gain, paradoxical excitement, ataxia particularly with older patients in dosage above 80 mg daily, rashes, headaches, addiction and withdrawal symp-

toms including often convulsions are some of the reported side effects. The benzodiazepines potentiate barbiturates and alcohol. Decreased visual acuity, phorias and altered depth perception sometimes contribute to traffic accidents. Chlordiazepoxide in a dosage of 100-300 mg daily orally or parenterally is an effective treatment for delirium tremens. In our practice we prefer one of the more potent phenothiazines for this condition.

With the minor tranquilizers we have included chlorprothixene - Taractan -. This member of the family of thioxanthenes is claimed to be both anxietolytic and antidepressant. The reaction of the medical public to this drug has been mixed. When it works it has a speedy onset of action. By and large, it is a weak drug with side effects similar to those associated with phenothiazine tranquilizers.

The problem of anxiety and particularly the amount necessary for the effective carrying through of psychoanalytic psychotherapy is surely a complex one. With the presently available drugs it is too optimistic to hope that one can take care of inadequate personalities, the chronically anxious and depressed and the constellation of symptoms associated with situational reactions. The relevance of drugs in the treatment of these problems and particularly the neuroses should be viewed in juxtaposition with other therapeutic modalities such as milieu therapy, environmental manipulation, and short-term psychotherapy. The aim should be not only development of insight but also goal-oriented ego support, and if we may be permitted a metaphor, the filling up of one's existential vacuum.

When the minor tranquilizers are used it should be for short periods of two to three weeks. Open prescriptions to be refilled on the patient's discretion are not recommended.

The tranquilizers undoubtedly have helped a great number of patients. They have contributed significantly to the freedom for the recent efforts to apply new concepts for patient care such as those of the open hospital approach a few years ago and now the principles of community psychiatry. They have stimulated research in the biological aspects of psychiatry and have increased the number of patients accessible to psychotherapy. Moreover their discovery and development have shown once more the profundity of Louis Pasteur's remark that "chances favor the prepared minds," and have given new import and relevance to basic and applied research for psychiatry, clearly pointing to the meaningfulness of interdisciplinary research. □

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When you consider using a drug *like* a broad-spectrum antibiotic, why not use a *true* broad-spectrum antibiotic? Like DECLOMYCIN.

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Denial of Illness

EDWIN A. WEINSTEIN, M.D.

Attitudes toward illness are part of characterological make-up and are related to habitual modes of adaptation to stress. An understanding of the mechanisms of denial is important in diagnosis and management.

PHYSICIANS ARE accustomed to patients who are openly fearful of illness, who exaggerate their symptoms and who are apprehensive that they may have a serious disease. There is less understanding, however, of persons who are reluctant to seek medical help and who ignore and even deny the existence of manifest pathology.

The topic of denial of illness is germane to neurology, psychiatry and general medicine and serves as a unifying concept for a variety of behavioral phenomena. In neurology denial is seen in its most pathological form in the syndromes of anosognosia[1] which occur after certain types of brain damage. Anosognosia means literally lack of knowledge of disease and patients explicitly deny or appear unaware of the existence of such disabilities as hemiplegia and blindness. A particularly interesting form of anosognosia is seen with the toxic encephalopathy associated with severe burns in which patients seem unaware of, unconcerned with and even may deny marked tissue loss, scarring and contractures.[2] In anoxemic states, a person may fail to recognize his failure in performance and greatly exaggerate his capabilities.

Denial is common even in the absence of physical conditions which impair brain function. One is familiar with patients in mental hospitals who deny that they are disturbed in any way or that there is any reason for hospitalization. Most important for our consideration here are persons who conceal, deny and ignore medical illnesses such as the diabetic who refuses to admit the need to take his insulin regularly. The attitudes of some patients with tuberculosis are well known. Estimates of the number who deny the diagnosis range from from nine per cent to 13 per cent, and even patients with gross hemoptysis may persistently deny it.[3] A study by Allen[4] considered problems of management and pointed out the need for nurses to understand such patients. A review[5] of patients coming to Memorial Hospital in New York with symptoms indicative of malignancy showed that 30 per cent had delayed consulting a physician for three months or more after the appearance of symptoms. The nature of the symptom was not statistically significant. While it might have been expected that the more conspicuous the symptom the more it would motivate a person to seek diagnosis, the reverse was found. Of those with more prominent symptoms 41 per cent delayed, while with rela-

The Washington School of Psychiatry and Neuropsychiatry Division, Walter Reed Army Institute of Research.
Read at the 36th Annual Fall Conference of the Oklahoma City Clinical Society October 26th, 1966.

tively inconspicuous symptoms only 27 per cent delayed. It was of interest that reluctance to discuss the condition with other people was related to delay.

Denial is not confined to patients but it occurs, as well, in members of their families. Parents of mentally retarded children refuse to admit that the child is retarded; they neglect the child; they blame other people; they are overly critical and hostile toward professional workers; they forget the child's medication; they overvaluate the child's incapacities and boast of his bright sayings and clever tricks rather than reporting his progress in toilet training and self feeding.

Why do people deny illness? People are afraid of cancer and other fatal or incapacitating conditions, but why don't they seek help or gain assurance that their symptoms are not serious? The fact that the delayers in the cancer investigation cited did not talk about their symptoms with family and friends indicates distrust and an expectation that the response would not be sympathetic or helpful. The Memorial Hospital study also showed that the patients who delayed investigation for cancer had previously shown the same reaction to other illnesses, so that the likelihood of cancer *per se* was not the main factor. One must approach this problem with the knowledge that attitudes toward health and illness are important factors of personality and significant determinants of social relationships.

I would like to begin by presenting, in some detail, an investigation into the personality and social background of patients, who, after brain injury, showed marked and enduring denial of illness. The study was originally undertaken because with similar brain lesions and incapacities, some patients had a great deal of denial and others very little. The study has been additionally productive because it delineated many of the defense mechanisms of normal persons which appear in exaggerated and caricatured form as a result of the brain damage.

Three main patterns of denial were distinguished. The first was designated as explicit verbal denial and in this pattern of response the patient, usually in a bland and unruffled manner, maintains that there is nothing wrong with him despite the presence of a paralysis or the fact of a craniotomy. In the second type, the patient admits some disability but attributes it to some relatively benign cause, often in paranoid fashion. For example, he may say that his arm is weak because of an injection or that he cannot walk because he has not had enough to eat. He may blame other people for his condition and in some cases he may claim that it is another person who is really ill. The third general pattern, an implicit denial, is seen in the patient who withdraws physically or responds to inquiries about illness with silence or outbursts of anger.

A review of the personality and social background showed that the forms of denial shown were manifestations of a habitual style of adapting to stress. The patients who showed complete and explicit denial had long tended to deny and rationalize away symptoms. They had been reluctant to visit doctors even with previous illnesses, and seemingly had regarded sickness as a weakness to which one must not yield or as representing time that must not be wasted. The maintenance of health and efficiency was perceived as a personal responsibility like honesty and punctuality, and illness was seen as a disgrace or loss of prestige. Generally, these patients were described by their relatives and associates as conscientious, compulsive people concerned with principles like duty and integrity. They were not emotional nor empathic, and seemed to have placed more reliance and trust in principles than people. In a sense, they disregard illness because they consider it wrong, a sign of inefficiency, and against their principles. It is common for them to delay going to a doctor because of the pressure of work at

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the office. Another reaction is for them to become depressed and feel ashamed and guilty about illness, a situation that may lead to neglect.

The patients who had paranoid forms of denial also had tended to react negatively to illness, but they had done so in a more concrete, physical fashion. The group included people who were physically afraid of doctors, who were upset by the smells of hospitals, the sight of blood, the pain of injections, etc. Generally they were emotional people, not concerned with ethical principles, who relied on personal contacts as a guide to reality. Thus they were sensitive to other people's attitudes and gestures of warmness and coldness, to their looks and facial expressions, to the physical attributes of masculinity and femininity. Illness and incapacity are seen not so much as failure and loss of status but as physical rejection and loss of affection, so that symptoms are not commonly blamed on other people. Women, for example, may ascribe their organic symptoms to mistreatment by their husbands or an improper sex life.

People in our third group who react to illness with withdrawal, silence and anger, have long equated illness with violence and death. Most of our subjects had experienced the death of a parent in childhood, or had grown up in a home where one or both parents had been chronically or episodically ill. As a result, illness was often seen as a punishment by or retaliation from a hostile environment.

Attitudes toward illness develop in childhood in the course of parental-child interaction and the interaction of the family in the larger environment. In some families, children learn not to upset their parents by complaints of illness. A parent may "disapprove" of illness and instill the idea that being sick is misbehavior or ingratitude. To relieve his own anxiety or sense of guilt, the parent may scold the child or reprove him for having brought the illness on himself by having eaten the wrong things or having disobeyed. Others have to assure a child that he is not really ill or that his symptoms are in his mind.

In the secondary environment, denial of illness has been part of our cultural tradition. In exchanging social amenities we generally say that we are fine no matter how we feel. Most of us habitually strengthen our denial mechanisms by the judicious, and not so judicious, use of alcohol. It is only in recent years that obituaries have included the fact that a person has died of cancer. Beliefs and attitudes about illness are part of religious and political ideologies. The Christian Scientist denies the reality of illness, and other groups regard illness as a sign of Divine wrath or as a testing of one's virtue.

In recent years, public attitudes have changed so that there is less secrecy and shame associated with cancer, mental retardation and mental illness. One may compare the mystery of President Woodrow Wilson's illness with the wide publicity accorded President Eisenhower's several disabilities. Wilson suffered a left hemiplegia and had pronounced changes in behavior. Yet he, his wife and his physician insisted that he was completely able to perform his duties as Chief Executive. It took another 40 years to introduce adequate provisions for Presidential incapacity. Denial is related to certain American values, to the belief that the spirit can overcome weakness of the flesh and to the idea that if one refuses to admit failure, even the impossible can be accomplished.

Denial of illness is not confined to patients and their families; it occurs in their doctors as well. A poll of physicians in 1960 asked the question "Would you want to know the truth if you had cancer?" A "yes" answer was elicited from 85 per cent of internists and general practitioners, from 93 per cent of surgeons, from 94.5 per cent of obstetricians and gynecologists, from 96.4 per cent of pediatricians, from 97.6 per cent of psychiatrists and from 100 per cent of dermatologists. It is evident that one significant determinant was the contact one actually has with patients dying of cancer. Similarly, the imminence of one's own death determines attitudes. When the same group of physicians was asked if they told the truth to patients with cancer, 65 per cent of the doctors aged 40 to 65 said they did, while only 39 per cent of doctors over 65 told cancer patients their diagnosis.

Symptoms of illness have meanings that go far beyond the seriousness, or lack of seriousness, of the complaints. In their denial patients seek to maintain self-esteem, obtain affection and avoid anticipated hostility and violence. Often, an appropriate response reduces the degree of denial. The rationalizations and excuses used by patients to explain away symptoms may give a mistaken impression of psychogenicity. Physicians also must be aware of their own denial and the tendency to use reassurance and medical clichés as a means of relieving their own anxiety. Such attitudes on the part of the doctor actually may reinforce the patient's denial. All these factors indicate the importance in medical practice of an understanding of the mechanisms of denial. □

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LIABILITY PLAN GAINS PHYSICAN ACCEPTANCE

OSMA's professional liability insurance program is gaining momentum. In a special called meeting last December the House of Delegates voted unanimously to endorse the Insurance Company of North America, known as INA, as the recommended professional liability insurance carrier for Oklahoma physicians.

Since that time 800 policies have become renewable and nearly seventy per cent have converted to the new carrier. OSMA officials are pleased with the enrolment and feel that the percentage of conversion will continue to improve.

To gain the endorsement, INA pledged itself to a continuing cooperative program with OSMA. One of its most attractive features was a "participating contract" whereby physicians may receive up to a ten per cent dividend when there is a favorable loss experience during a year. This innovation would have returned about $100,000 in premiums to OSMA members over the past five years.

Other INA features include:

- An active and effective malpractice claims prevention program designed to reduce claims and losses.
- A certified list of all insureds with their policy numbers and amounts of coverage will be furnished OSMA (as a safeguard against physicians misplacing their individual policies).
- Legal counsel for the defense of suits can be selected by OSMA with the agreement of the company.
- Accurate loss information and statistical studies will be submitted regularly to OSMA.
- Any rate change will be subject to consultation with the association at least 90 days in advance.
- Slander and assault and battery will be covered where associated with medical practice.

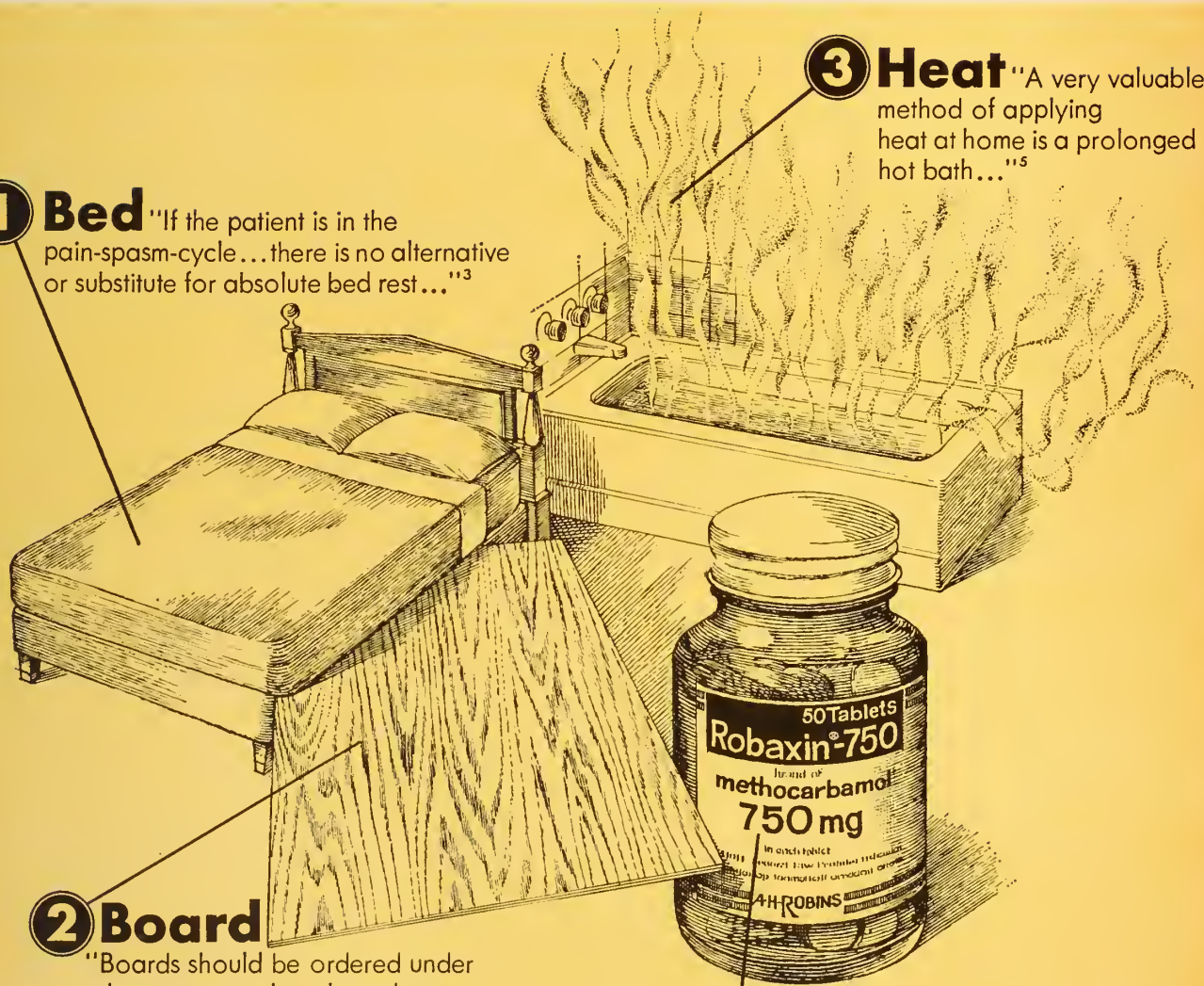
These and other concessions, along with INA's spirit of cooperation, lead the House of Delegates to its unanimous endorsement. As a further example of its good faith, INA is currently working with the OSMA Council on Insurance to create a comprehensive folder on claims prevention. This folder will be made available to OSMA members in the near future.

Other cooperative projects include a speakers program for county medical society meetings and a statewide seminar on professional liability and claims prevention.

LOW-BACK PAIN

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The low back pain that is most frequently seen in general practice is mechanical in nature, i.e., postural back pain, joint dysfunction and acute back strain.[1,2] For this type of discomfort, a conservative regimen is usually sufficient to relieve aches and pains, and to help keep the patient functioning. Components of this basic program include:



1 Bed "If the patient is in the pain-spasm-cycle...there is no alternative or substitute for absolute bed rest..."[3]

2 Board "Boards should be ordered under the mattress...these boards act by immobilizing the spine..."[4]

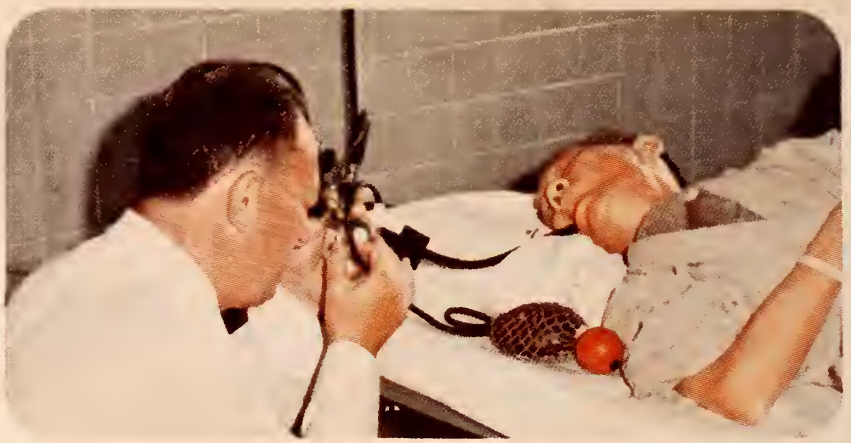
3 Heat "A very valuable method of applying heat at home is a prolonged hot bath..."[5]

4 Robaxin®-750 (methocarbamol, 750 mg. capsule-shaped tablets) A well-tolerated[6] skeletal muscle relaxant, methocarbamol helps relieve spasm "...without interfering with normal tone and movement."[7] And there is little likelihood of sedation.[6]

Indicated for relief of skeletal muscle spasm. **Contraindicated** in hypersensitive patients. **Side Effects** (lightheadedness, dizziness, drowsiness, nausea) may occur rarely, but usually disappear on reduced dosage. Hypersensitivity reactians develop infrequently. See product literature for further details. **Also available:** Robaxin® Tablets (methocarbamol, 500 mg.) Rabaxin Injectable (methocarbamol, 1 Gm./10 cc.)

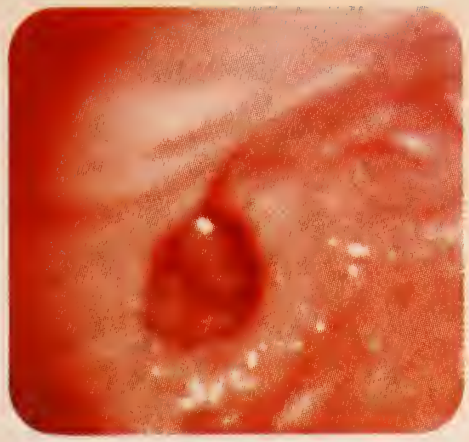
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AN IMPORTANT PROBLEM in managing gastrointestinal disorders has been the choice of an anticholinergic agent which will act positively and selectively on the gastrointestinal tract without extensive secondary effects.

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By contrast, it required 0.8 mg. or double the usual dose of atropine intravenously to achieve similar gastric relaxation. Side effects of this dosage of the belladonna alkaloid were pronounced. Ventricular rates were as high as 150 per minute.

For positive, selective anticholinergic benefits Pro-Banthine is indicated in patients with peptic ulcer, gastritis, irritable colon and other forms of gastrointestinal hypermotility.

Dosage: The maximal tolerated dosage is usually the most effective. For most *adult* patients this will be four to six 15-mg. tablets daily in divided doses. In severe conditions as many as two tablets four to six times daily may be required. Pro-Banthine (brand of propantheline bromide) is supplied as tablets of 15 mg., as prolonged-acting tablets of 30 mg. and, for parenteral use, as serum-type ampuls of 30 mg. The parenteral dose should be adjusted to the patient's requirement and may be up to 30 mg. or more every six hours, intramuscularly or intravenously.

Contraindications: In glaucoma or severe cardiac disease.

Precautions: Since varying degrees of urinary hesitancy may occur in the elderly male with prostatic hypertrophy, this should be watched for in such patients until they have gained some experience with the drug.

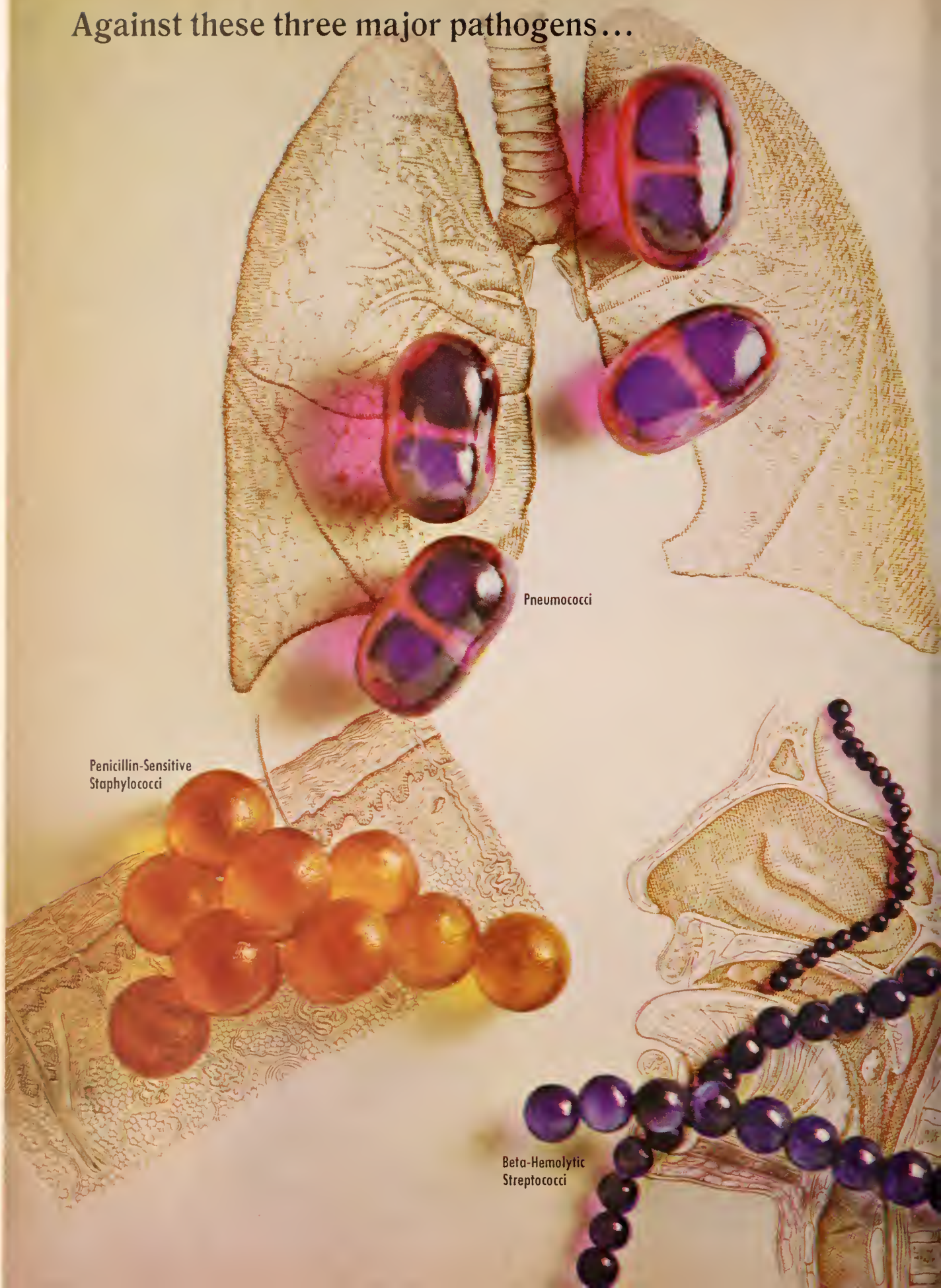
Although never reported, theoretically a curare-like action may occur with possible loss of voluntary muscle control. Such patients should receive prompt and continuing artificial respiration until the drug effect has been exhausted.

Side Effects The more common side effects, in order of incidence, are xerostomia, mydriasis, hesitancy of urination and gastric fullness.

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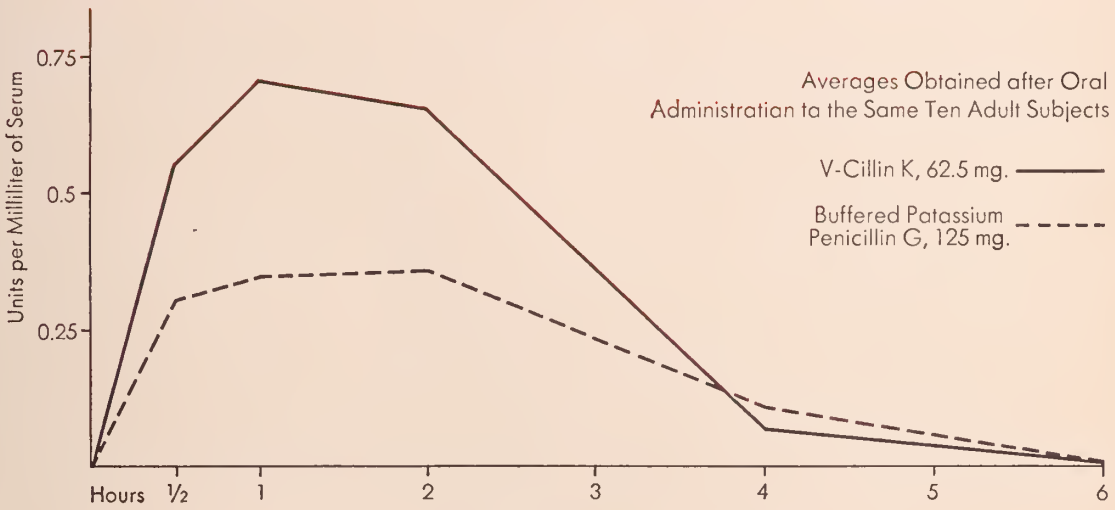
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Penicillin G	0.02	0.005-1.6	0.005	0.002-0.2	0.02	0.01-0.1
Methicillin	1.6	0.4-6.3	0.2	0.1-0.4	0.2	0.1-1.6
Oxacillin	0.4	0.1-3.1	0.04	0.02-0.4	0.1	0.04-0.8
Claxacillin	0.2	0.2-0.8	0.1	0.1-0.8	—	—
Nafcillin	0.4	0.2-0.8	0.04	0.02-0.1	0.02	0.02-0.2
Ampicillin	0.2	0.1-0.8	0.02	0.01-0.04	0.02	0.01-0.04

Adapted from Klein, J. O., and Finland, M.: New England J. Med ,269:1019, 1963.

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Contraindication: V-Cillin K should not be administered to a patient with a history of penicillin hypersensitivity.

Warnings: In rare instances, the use of penicillin may cause acute anaphylaxis which may prove fatal unless promptly controlled. This type of reaction appears more frequently in patients with a history of sensitivity reactions to penicillin and in those with bronchial asthma or other allergies. Resuscitative drugs should be readily available for emergency administration. These include epinephrine and pressor drugs (as well as oxygen for inhalation) for relief of immediate allergic manifestations and antihistamines and corticosteroids for delayed effects.

Precautions: V-Cillin K should be used cautiously, if at all, in a patient with a strongly positive history of allergy.

In prolonged therapy with penicillin, and particularly with high parenteral dosage schedules, frequent evaluation of the renal and hematopoietic systems is recommended.

In suspected staphylococcus infections, proper laboratory studies (including sensitivity tests) should be performed.

The use of penicillin may be associated with the overgrowth of pencillin-insensitive organisms. In such cases, its administration should be discontinued, and appropriate measures should be taken.

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Penicillin is a substance of low toxicity, but it does possess a significant index of sensitization. The following hypersensitivity reactions associated with the use of penicillin have been reported: skin rashes ranging from maculopapular eruptions to exfoliative dermatitis; urticaria; and reactions resembling serum sickness, including chills, fever, edema, arthralgia, and prostration. Severe and often fatal anaphylaxis has occurred (see Warnings). Hemolytic anemia, leukopenia, thrombocytopenia, and nephropathy are rarely observed side-effects and are usually associated with high parenteral dosage.

Administration and Dosage: For Tablets V-Cillin K and for V-Cillin K, Pediatric, the usual dosage ranges from 125 mg. (200,000 units) three times a day to 500 mg. (800,000 units) every four hours. For infants, the daily dosage may be 50 mg. per Kg. of body weight divided into three doses.

Beta-hemolytic streptococcus infections without associated bacteremia may be treated with 200,000 to 400,0000 units three times a day. Therapy should be continued for a minimum of ten days to prevent development of rheumatic fever and/or other serious complications. Dosage for routine streptococcus prophylaxis in patients with a history of rheumatic fever or congenital heart disease may be 200,000 units once or twice daily. When such patients undergo tonsillectomy, tooth extraction, or other minor surgery, the prophylactic dose should be 500,000 units every six hours given two days prior to surgery and for two days postoperatively. If oral medication is not feasible on the day of surgery, parenteral therapy should be considered. Mild to moderately severe pneumococcus pneumonia has been treated effectively with 250 mg. every six hours.

In staphylococcus infections, 400,000 units or more should be given every six to eight hours in conjunction with indicated surgical procedures.

For gonorrhea in males, 500 mg. (800,000 units) every four hours for three doses may be employed; in females, 500 mg. every four hours for six doses are recommended. Refractory infections generally respond to a second treatment three to four days following completion of the first. Treatment of gonorrhea with severe complications should be individualized, with prolonged and intensive treatment. Patients with a suspected lesion of syphilis should have a dark-field examination before receiving penicillin and monthly serologic tests for a minimum of three months.

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Problems Associated With Detection of Phenylketonuria

JAMES G. COLDWELL, M.D.

The majority of newborn infants in Oklahoma have their serum phenylalanine determined. Elevated levels do not necessarily indicate that the child has phenylketonuria. Additional investigation must be done.

PHENYLKETONURIA IS a metabolic disorder that is due to failure to convert phenylalanine to tyrosine. Its most severe clinical manifestation is mental retardation. Since it was first described in 1934, the metabolic picture has been mostly unravelled however, comprehensive screening programs reveal that there is considerable variation in the metabolism of phenylalanine. The metabolic picture can be made normal by decreasing the phenylalanine intake which, if done soon enough, will usually prevent mental impairment. Therefore, it is very important that affected individuals be detected as early in life as possible. This can be done in the early neonatal period at which time you have a captive population by determining the serum phenylalanine. On June 21, 1965, House Bill No. 87 was signed into law. Oklahoma joined a legislative movement involving most states by requiring programs for the detection of phenylketonuria.

Several methods of determining the serum phenylalanine are available, but thus far, only the Bacterial Inhibition Assay described by Guthrie[1] has been widely accepted as a screening method. This test is based on the prevention of the inhibition of growth of Bacillus subtilis (ATCC 6051) by Beta-2-thienylalanine in a minimal culture medium by phenylalanine. Capillary blood is collected on a filter paper and a piece of this, one-fourth inch in diameter, is placed on the agar containing the inoculum and inhibitor (Beta-2-thienylalanine). After 16 hours of incubation at 37° C., the zones of growth are measured and correlated with the zones of growth around the control discs to calculate the amount of phenylalanine present.

Collection of the specimen is important and the instructions printed on the collection paper must be followed closely. Timing of the collection and amount of blood obtained are very important. At least 24 hours must elapse after the intake of phenylalanine (protein feed) before an elevation in serum phenylalanine will be consistently found when there is a deficiency of phenylalanine hydroxylase. In order to have a volumetrically adequate specimen, the filter paper within the circle must be permeated with the infant's blood.

Because of the number of difficulties associated with this method, it is one that should be performed in a laboratory where adequate quality control can be exercised. Care

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must be exercised in the handling of the spores, media and reagents for, as in all bioassay techniques, rather minor alterations of the method will distort the results. The procedure must be followed exactly and the zone of growth must be read carefully.

Comparison of the accuracy of the Bacterial Inhibition Assay with paper chromatographic, enzymatic and fluorometric methods has been done.[2, 3] In general, the accuracy of the assay method becomes less as the concentration of phenylalanine increases. The error usually is in the direction of overestimating the concentration of phenylalanine. Since the assay method is accurate with lower concentrations of phenylalanine and the errors are those of falsely high levels, it appears as though the assay method is a satisfactory screening test. A more satisfactory method has been devised which conists of automation of the fluorometric method but it is not yet generally available.

Determination of an elevated serum phenylalanine by such a screening method must be followed by more accurate determination. Since it is now apparent that all infants with phenylalaninemia do not have phenylketonuria, one must be reasonably sure that the child has "true phenylketonuria" before dietary treatment is instituted. Deficiency of phenylalanine, an essential amino acid, is quite deleterious.[4]

As indicated on the table, phenylalaninemia in early infancy indicates phenylketonuria only about 75 per cent of the time. Since dietary management is difficult, it is important to determine insofar as possible which infants actually have phenylketonuria. One can be reasonably certain if the serum phenylalanine exceeds 30 mgm%, the serum tyrosine is less than five mgm%, the urine is positive for phenylpyruvic acid and O-hydroxyphenylacetic acid. A typical response to a phenylalanine loading test is of further help. If this biochemical picture is not corrected, over 90 per cent of these children will become severely mentally defective. Since the rate at which neurological damage occurs is thought to be fairly rapid, it is our practice to institute the diet as soon as the appropriate blood and urine specimens have been obtained.

The remainder of the children seem to fall into three groups, of which the premature group is the largest. The premature infants apparently have a delay in development of tyrosine oxidase activity since their serum tyrosine level is also elevated. The level will become normal in time, but it should be hastened by the administration of folic acid or ascorbic acid.

Apparently, the "atypical phenylketonuric" has impairment of both phenylalanine hydroxylase and phenylalanine transaminase for serum tyrosine levels are low and urinary metabolites derived by transamination of phenylalanine are low. These children apparently have normal intelligence even if they are not treated.

There appears to be a group of children with the identical biochemical picture of "true phenylketonuria" who become normal biochemically later. Since apparently it is not possible to distinguish these children from "true phenylketonurics" in early infancy, they must be treated. We do not believe that one is justified in withholding the diet until the biochemical picture becomes clear, for the diet, if managed properly, is not deleterious to the infant. Since one cannot know when the condition is a transient one, the infant must be challenged with a normal diet when he is three months old or so and investigated biochemically once more.

In order to illustrate the problems that result when the investigation of the child is incomplete, three cases are reviewed briefly.

CASE #1. This part Negro boy was first seen at one month of age. He had a positive Guthrie test in the neonatal period and at one month, his serum phenylalanine (fluorometric) was 33 mgm%, his urine formed a green precipitate with $FeCl_3$ and it contained O-hydroxyphenylacetic acid. He then developed hypertrophic pyloric stenosis.

Since his graduation from the University of Oklahoma School of Medicine in 1955, James G. Coldwell, M.D., has been certified by the American Board of Pediatrics. He is a member of the American Academy of Pediatrics and specializes in the treatment of handicapped children at Tulsa Children's Medical Center.

CHILDREN WITH ELEVATED BLOOD PHENYLALANINE[5, 6, 7, 8, 9]

	Phenylketonuria (3/4)	Prematures	Atypical Phenylketonurics	Transient Phenylketonurics
Serum Phenylalanine	over 30 mgm%	5 to 20 mgm%	10 to 30 mgm%	over 30 mgm%
Serum Tyrosine	below 5 mgm%	above 5 mgm%	below 5 mgm%	below 5 mgm%
Urinary Phenylpyruvic acid Urinary O-hydroxyphenyl-acetic acid	Positive	Negative	Usually negative	Positive
Phenylalanine tolerance (100-300 mgm/kg)	Abnormal	Normal	Abnormal	Abnormal
Enzyme defect	Inactive phenylalanine hydroxylase	Delayed development tyrosine oxidase	Impaired phenylalanine hydroxylase and transaminase	Transient phenylalanine hydroxylase defect
Mental Development (without treatment)	Subnormal	Probably normal	Probably normal	Probably subnormal

After surgical treatment he was maintained on 25 mgm/kg of phenylalanine daily without difficulty. In order to maintain a normal level of serum phenylalanine, his phenylalanine intake was increased until at six months, he was given a regular diet. All biochemical tests were normal at that time but increased tone was present in the lower extremities.

Comment: This child evidently had "transient phenylketonuria" which as yet cannot be differentiated from "true phenylketonuria" in the neonate. The incidence of this condition is not known, but it is probably infrequent. However, it illustrates the need to place the infants on a full phenylalanine load at three months or so in order to see whether the enzyme systems are still deficient.

CASE #2. (B.D. 6-16-64) This white girl had a positive Guthrie test prior to her discharge from the hospital after birth. At 35 days of age, her serum phenylalanine (fluorometric) was 32 mgm%. A low phenylalanine diet was instituted at 45 days; at 51 days the serum phenylalanine was 6.8 mgm%. The child was hypotonic and her development was below the expected levels each time she was seen. Maintenance of the diet was poor because the mother did not believe that anything could be wrong with the child, however multiple serum levels were between 1.0 and 6.6 mgm%. Because the serum phenylalanine had been low despite the mother's negligence in administering the diet, the diet was discontinued when the child was 17 months old. Subsequent serum phenylalanine levels were between 1.8 and 4.0 mgm%.

Comment: We cannot be sure what this child's elevated serum phenylalanine represented because a biochemical profile was not obtained. She may have had either "transient" or "atypical" phenylketonuria. Because her metabolism of phenylalanine is different now than at five weeks of age, it is not possible to determine what metabolic aberration was present. It does appear as though she may be mentally retarded.

CASE #3. (B.D. 1-25-62) This white boy was developing normally until he was about three months old. At that time he was able to roll over from his back. He did not progress well after this and it was thought that his legs were spastic. At six months his urine was repeatedly positive when tested with Phenistix. Serum was sent for a phenylalanine determination, but this was not done. He was placed on a low phenylalanine diet and then the family began to move (New Mexico, Oklahoma, Germany, Oklahoma). The diet was maintained strictly until he was two and one-half years old. Attempts then were made to liberalize the diet, but his urine became positive (Phenistix). On one of these occasions however his serum phenylalanine was 2.2 mgm%. At four years of age, liberalization was begun while his serum phenylalanine was being monitored. It remained within the normal range (1.5 mgm%) and the urine was normal when he was on a full phenylalanine load. His physical examina-

tion is normal and he has a low average I.Q. (86).

Comment: Because of the lack of facilities where this child was diagnosed, inadequate referral resources and the family's mobility, this child was not properly diagnosed. Apparently he had some substance in his urine which reacted with ferric salts that is no longer present. Although testing the urine is an indispensible aid to diagnosis, by itself it is only a screening test.

SUMMARY

Universal testing of the blood of newborn infants for elevated levels of phenylalanine has placed every physician who is involved in the care of infants in a difficult situation. In order to handle this best, he must be certain that the screening tests are done properly, that a biochemical profile be done on all infants with an elevated serum phenylalanine, that institution of treatment be done only when the indications are certain, and that the child have proper periodical physical, nutritional and biochemical examinations. Such a program usually cannot be provided by the primary physician or pediatrician without the facilities of a specialized clinic to assist him. □

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Physiology and Pathophysiology of the Circulation of the Stomach

EUGENE D. JACOBSON, M.D.

The circulation of the stomach plays a supportive role in the maintenance of the organ during active secretion. In the genesis of peptic ulcer the circulation does not appear to have an important etiologic role.

INVESTIGATORS concerned with the circulation of the stomach have been intrigued by two problems. First, has been the question of a relationship between secretion and blood flow in the stomach, and second, has been the role played by the circulation in the pathology of peptic ulcer. The physiology of the gastric circulation has been the subject of continuing investigation since the time of Beaumont. Similarly, there has been the question of a fundamental role for the gastric circulation in the etiology of peptic ulcer which has been considered since Virchow's proposals in the 19th century. The study of the gastric circulation has been a difficult affair because of the complexity of the vasculature of the stomach on both the gross and microscopic levels. In addition, it has been difficult to measure gastric blood flow in the conscious human or animal. As a result, investigators have had to go to inordinate lengths to isolate the gastric circulation or they have had to employ some indirect estimates of blood flow. This has led to conflicting evidence. The role played by the gastric circulation in the development of ulcer disease is also controversial. Many students of the ulcer problem feel that the stomach loses a measure of resistance to acid-peptic juice and that this is the key initiating event in the disease. It has been tempting to assign to the circulation some importance in the lowering of tissue resistance to gastric juice.

BLOOD FLOW AND SECRETION IN THE STOMACH

There are two competing hypotheses which have been forwarded to account for a possible relationship between secretion and blood flow in the stomach. The first hypothesis is that there is no causal relationship between secretion and blood flow in the stomach and the second hypothesis maintains the opposite. Two lines of evidence support the contention that blood flow and secretion are not causally related in the stomach. It has been shown that a strip of excised gastric mucosa in a nutrient bath can be stimulated to secrete acid gastric juice with appropriate stimuli such as histamine and pilocarpine. Thus, under *in vitro* conditions, secretion can proceed without the influence of the circulation. Unfortunately, *in vitro* experiments involve conditions which limit any extrapolation to the living animal. The second and more convincing

body of evidence which supports the theory that there is no causal relationship between secretion and blood flow in the stomach comes from *in vivo* pharmacological investigations. There is much evidence to indicate that there is no correlation between the gastric secretory and circulatory responses to a variety of pharmacological agents. It has been shown that histamine and acetylcholine, two well known gastric secretory stimulants, induce a decrease in blood flow to the stomach, whereas catecholamines, secretory inhibitors, result in an increase in gastric blood flow.

The most convincing evidence supporting the contention that there is a causal relationship between secretion and blood flow in the stomach comes from *in vivo* pharmacological studies. It has been reported that there is a striking positive correlation between the gastric secretory and circulatory responses to a variety of pharmacological agents. Thus, histamine and acetylcholine have been reported to increase gastric blood flow, whereas catecholamines have been shown to decrease blood flow to the stomach. Furthermore, Beaumont originally, Wolf and Wolff, and many others have employed a variety of circulatory indices to show that gastric secretory stimuli increase and gastric secretory inhibitors decrease these indices of mucosal blood flow.

It should be obvious from even so brief a survey of the pertinent literature that we do not know what the relationship is between secretion and blood flow in the stomach if we examine the older literature. Pharmacological studies, which should have been helpful in evaluating the two competing hypotheses have served instead to confuse and to contradict. Histamine, for example, a standard gastric secretory stimulant, has been reported to increase blood flow, to decrease blood flow, and to leave blood flow to the stomach unchanged; it depends only upon whose report you happen to have read. The problem with which we are confronted in attempting to evaluate a possible relationship between secretion and blood flow in the stomach is a methodological problem. Our evidence on the subject of this possible relationship comes to us essentially from two types of experiments. First, there have been the acute animal studies in which blood flow to the stomach has been measured directly. These investigations have been carried out in preparations in which the animal is at some varying and unknown stage of anesthesia, his gastric circulation has been massively traumatized, and his overall circulatory status teeters on the verge of shock. In this situation, the state of the preparation is a greater factor than is the variable the investigator intentionally introduces. The second type of experiment that has provided information in this controversial area has been one in which conscious humans or animals have been used and the gastric mucosal blood flow has been determined with some circulatory index. Here the state of the preparation is satisfactory but, unfortunately, these indices of the mucosal blood flow, such as the color of the mucosa or the diameter of its small blood vessels, do not actually measure mucosal blood flow. At best, they estimate mucosal blood volume. As is well known, blood flow and blood volume can vary oppositely in any tissue at any time. In short, our evidence on the subject of a possible relationship between secretion and blood flow in the stomach comes to us essentially from experiments in which either the state of the preparation or the method of measuring blood flow have been unreliable.

In order to overcome these criticisms of previous work, we established four requirements we felt would have to be met in order for new information to embody any methodological advance. First, experiments would have to be carried out in a chronic preparation, that is to say, a conscious animal many days or weeks past surgery. Second, secretion and blood flow would have to be measured simultaneously, and the measurement of one parameter not interfere with that of the other. Third, measurements of secretion and blood flow would have to be continuous or frequent in order to obviate the effects of natural fluctuations. Finally, we would have to measure not only total arterial inflow to the stomach but also gastric mucosal blood flow, since the non-mucosal portions of the stomach wall do not secrete acid gastric juice.

In order to meet these four requirements, we turned to two blood flow measuring tech-

niques which had not previously been employed in the study of this problem. We used the chronically implanted blood flow transducer, and we developed a clearance technique for the estimation of gastric mucosal blood flow. The clearance technique was based upon the selective permeability of the gastric mucosa to the poorly dissociated basic drugs such as aminopyrine. These agents are attracted into the gastric juice because of the great hydrogen ion gradient between the juice and plasma. The rate of transport into the gastric juice is blood flow limited. Consequently, the clearance of materials like aminopyrine can be used to estimate gastric mucosal blood flow.

The subjects of our studies were conscious dogs. Some weeks prior to experimentation the animals were prepared surgically with a chronically implanted electromagnetic blood flow meter transducer on the splenic artery branch leading to a Heidenhain pouch. The animals were trained to stand quietly for many hours in a sling frame during periods of administration of drugs, collection of biological samples and measurement of physiological parameters.

Results with this experimental preparation can be summarized briefly in four major findings. First, whenever secretion was stimulated to increase, there was an increase in mucosal blood flow and conversely, during inhibition of secretion there was a decrease in mucosal blood flow. Second, it was possible for pharmacological agents to alter blood flow in the mucosa of the stomach without changing secretion. Third, there was no consistent relationship between total arterial inflow to the stomach and changes in secretory rate. Fourth, we found a redistribution of blood flow from the resting muscle and serosa to the actively secreting mucosa.

It appears that the basic relationship existing between secretion and the circulation in the stomach is such that whenever secretion is augmented, there is an increase in metabolism with the production of vasodilator metabolites. This leads to a local dilation and an increase in mucosal blood flow. Depressing secretion and metabolism produces the opposite effect. On the other hand, vasoactive agents which have no effect on gastric secretion are also capable of changing gastric mucosal blood flow. Our inability to find any correlation between gastric secretory changes and alterations in total arterial inflow to the stomach helps to explain why investigators in the past who compared these two parameters, came up with such conflicting findings. It also appears that the secreting stomach undergoes a redistribution of blood flow within its walls, permitting the metabolically active mucosa to drain blood away from the quiescent muscle mass. The mechanism of this redistribution of perfusion is not clear to us, although it is known that similar events take place in the small intestine. Thus, our overall conclusion from this work would be that the circulation plays an important supportive role in the secretory processes within the stomach in a meaningful and understandable manner.

THE ROLE OF THE CIRCULATION IN PEPTIC ULCER

A vascular etiology for ulcer of the stomach and duodenum has had its adherents in the period since Virchow proposed that small thromboses in the gastric mucosa led to local devitalization with subsequent autodigestion and ulceration. Three lines of evidence support the vascular etiology in peptic ulcer: The association of cardiovascular disease with ulcers, cytological studies, and the production of experimental ulcers with vasoactive drugs.

Various authors have shown that in postmortem material there is a high incidence of peptic ulcer in patients dying with atherosclerotic disease. However, the finding that two disease entities share a common bond only at the autopsy table may represent selected coincidence more than causal relationship. In the preterminal state, gastrointes-

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tinal ulceration may occur and be noted at the postmortem examination. This is not a case of peptic ulcer. The natural history of peptic ulcer presents far more differences from atherosclerosis than similarities. Vascular disease directly involving the stomach is an exceedingly rare disorder. In addition, recent statistical analyses have shown a negative correlation between peptic ulcer and cardiovascular disease.

A second line of evidence favoring a vascular basis for peptic ulcer stems from microscopic studies. Ulcerated stomachs show widespread vascular changes in the adjacent mucosa. In addition, under dynamic conditions, it is possible to observe significant vascular alterations early in the formation of experimental gastric ulcers. The pathologic changes noted have included focal vasospasm, stasis of blood flow, agglutination of red cells, ischemia, congestion, edema and focal hemorrhages.

The descriptions of microcirculatory changes found in pathological or experimental ulcerative gastric mucosa are non-specific. The lesions or changes noted are what might be expected in vessels exposed to trauma. Vascular lesions of this order have been found in other tissues in a variety of diseases including generalized infections, cardiovascular disorders, allergic reactions, metabolic disorders and malignancies. In brief, inferences of causality cannot be extracted from this information, since we have no way of knowing whether the process of ulceration caused the vascular changes or vice versa. Futhermore, the finding that the first observed changes in experimental ulcer formation are vascular changes does not constitute proof that these changes caused the ulcer. It only signifies that these were the first effects which could be observed with the techniques employed. Somewhere between the administration of the ulcerogen and the frank development of the ulcer there may be occult steps which cannot be visualized with a microscope. Invisible metabolic changes in mucosal cells or permeability changes in the mucosal membrane or its mucus lining could readily precede and be responsible for the vascular response to the ulcerogen. When the gastric juice is buffered to a high pH, vascular changes do not develop following histamine administration.

There is a variety of ulcerogenic agents which have well established vascular actions elsewhere in the body. Gastric ulcer formation can be induced or augmented experimentally with such vasoactive drugs as epinephrine, histamine, vasopressin, reserpine, 5-hydroxytryptamine, and acetylcholine. Mechanical occlusion of the gastric microcirculation or the gastric veins is ulcerogenic. It is tempting to propose a vascular mechanism for ulcer caused by vasoactive drugs.

There are three major criticisms of the inferences which have been extracted from experimental ulcer studies to support a vascular etiology for peptic ulcer. First, we would have to know the vascular effects of the ulcerogenic drug or procedure on the gastric circulation. Histamine is a potent ulcerogen, but the drug has been reported to increase, to decrease and to have no effect on gastric blood flow. What inferences can one draw about a vascular basis for the ulcerogenic action of histamine?

Second, even if we could settle our ignorance in the matter of drug action on gastric blood flow, we are faced with another dilemma. Ulcers have been produced by agents which are vasodilators in other circulatory areas, namely histamine, acetylcholine or nitroglycerine; yet ulcers can be equally well induced by vasoconstrictors such as cathecholamines, vasopressin or 5HT. Sympathetic stimulation or parasympathetic stimulation or removing the sympathetics yields ulcers. Ulcers develop during anemia or polycythemia. What series of *ad hoc* postulates will be required to bind these inconsistencies into acceptable form?

Finally, if vascular failure leads to a devitalization of tissue and subsequent autodigestion and peptic ulceration, one would anticipate that the surest way to induce chronic ulcers of the stomach would be to devascultarize the organ, This procedure has been shown repeatedly to have little long-term effect on either the function or structure of the gastric mucosa and does

not lead to chronic ulceration despite ligation of 90 per cent of the nutrient arteries to the stomach. The extensive interconnections between the many arteries of the stomach render subtotal vascular ligation ineffectual in chronically impairing secretion or tissue integrity, while ligation of all arteries to the stomach rapidly induces gangrene and death to the animal. But we are supposed to accept the occurrence of focal ischemia as the initial event in chronic peptic ulceration. Focal ischemia may occur during experimental ulceration, but we do not know whether such mucosal hypoxia triggers the ulcer or whether it is a late event in the development of the lesion.

The cause or causes of peptic ulcer are not understood. If we accept the hypothesis that some combination of excess peptic-acid secretion and a decline in mucosal resistance leads to peptic ulcer formation, then local failure of the circulation can be viewed as one of several possible factors which may contribute to a lessening of tissue resistance. However, this tells us nothing about the importance of this circulatory factor nor whether it occurs early or late in the natural history of peptic ulcer.

SUMMARY

Some advances in our understanding of the physiology of the gastric circulation have been reported. Secretion is related to blood flow in that alterations of secretion trigger directionally corresponding changes in the gastric mucosal circulation. There is no convincing body of evidence, however, that circulatory changes are responsible for petic ulcer. □

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ABSTRACTS

THE RUBELLA SYNDROME

This article is a review of the experience with the 1964 outbreak of rubella, the defects produced in the infants, and new viral studies.

Rubella was differentiated from other viral exanthems as early as 1920. By 1941 congenital cataracts were being reported in infants whose mothers had had the viral infection in Australia in 1940. By 1945 a study had been completed of these cases and the defects of the infants noted to include—deaf-mutism, heart defects, cataracts, and microphthalmia. When the maternal infection was prior to the second month, eye defects were noted; when the infection was after the second month, heart disease and/or hearing defects were noted. A follow-up examination of the children at four to five years of age showed growth retardation, microcephaly, and delayed dental eruption.

Viral isolation was successful in 1962 and was demonstrated in the urine, blood, and throat and rectal swabs of patients with rubella. The virus has been isolated from naso-pharyngeal swabs as early as 13 days prior to the rash and has persisted as long as six days after the rash disappears. Gamma globulin has been shown to suppress the clinical symptoms. However, the viremia is thought to still occur as 75 per cent of patients given gamma globulin may show serologic conversion. Because of this gamma globulin is not recommended for pregnant women exposed to the virus as clinical symptoms may be suppressed without preventing fetal infection.

In 1963 Selzer isolated the virus from aborted fetal and placental tissues—from fetal brain, heart, skin, muscle, blood, and placenta and amniotic fluid. Alford in 1964 was the first to report recovery of the virus from infants with the post rubella syndrome. One infant excreted the virus for 18 weeks after birth.

In 1964 the largest rubella outbreak in the U. S. since 1941 occurred. Studies from this epidemic have shown new findings: Intra-uterine growth failure, and hepatosplenomegaly, purpura and thrombocytopenia: eye defects include cataracts, microphthalmia and glaucoma. Cardiac malformations include patent ductus arteriosus, pulmonary artery stenosis, and ventricular septal defects. It is estimated that one in 200 of all babies born in Philadelphia during this epidemic were affected by maternal rubella infection. Only one-half of infants with anomalies are identified at birth. A significant percentage excrete virus as late as ten to 12 months after birth. At birth the infants have rubella serum neutralizing antibody titers comparable to their mothers —indicating that the fetus is capable of producing antibody and that the antibody is not all transplacentally acquired.

At present this center is working on development of an attenuated vaccine to actively immunize against this disease.

Reviewer's note: This is a carefully written and very informative study showing the vast strides that have been made in a relatively short time toward definitive epidemiologic and laboratory studies. Hopefully rubella will soon follow the virus pathway of poliomyelitis.

The rubella syndrome. H. D. Riley, Jr., S. B. Martel, P. H. Howard, Jr., W. M. Thompson, Jr., E. D. Thomas, E. C. Bracken, and H. V. L. Sapper. Clin. Ped. 5: 671-680, 1966.

MENTAL RETARDATION IN CHILDREN OF PHENYLKETONURIC MOTHERS

The authors previously reported on three phenylketonuric mothers who had children all of whom were mentally retarded but non-phenylketonuric. The mothers themselves were mentally retarded, presumably from their metabolic defect, and it was postulated that this metabolic derangement during pregnancy caused the mental defect in the children. This report describes three phenylketonuric mothers whose disease was picked up only when their mentally retarded non-phenylketonuric children were investigated. These women were able to function in their society. Others have also described phenylketonuric mothers of normal mentality. Until recently limited clinical and genetic information suggested that offspring were rare in phenylketonuric mothers and no intrauterine damage was done by the metabolic aberrations. As yet the true incidence of this defect is unknown. However, mass screening suggests this is larger than suspected and that there are many persons of normal mentality with this defect. Higher plasma levels of phenylalanine have been found in the pregnant phenylketonuric—suggesting that the placenta may magnify the maternal biochemical abnormality.

The children seemed normal at birth but developmental achievements were slow and they were unable to adjust to school or had to be institutionalized. Among the authors' cases of six phenylketonuric mothers and 24 offspring, only two children had greater intelligence than the mother.

The authors stress the role that high phenylalanine levels in the plasma could have in damaging the brain of an otherwise normal fetus and that this condition may be responsible for a clinically significant number of retarded children.

Reviewer's note: With this study another facet in the field of mental retardation becomes clearer. This form of mental retardation may be avoided— either by prevention of pregnancy or perhaps by inducing low blood levels of phenylalanine during pregnancy.

Mental retardation in children of phenylketonuric mothers. C. C. Mabry, J. C. Denniston and J. G. Colwell. New Eng. J. Med. 275: 1331, 1966 □

Books As Clinical Tools

CLINICAL REFERENCES ON MENTAL RETARDATION AND THE HANDICAPPED CHILD

RICHARD C. GILMARTIN, M.D.

Professional interest in the retarded child began with Jean Itard, a French physician. Between 1800 and 1805 he undertook the task of educating a boy of 12 who was captured in the forest of Aveyron and diagnosed as retarded by another well known physician, Pinel. Although he viewed his experiment as a failure, students in the field of retardation value his book, "The Wild Boy of Aveyron,"[1] which describes Itard's efforts, as the first scientific attempt at training a retarded child.

Another physician, a student of Itard's, Edward Seguin, expanded his teacher's techniques into a complex, systematic sequence of training which he called the "physiological method." By the middle of the nineteenth century Seguin had become an international leader and was responsible for stimulating the development of a number of residential schools for the retarded throughout the world. Because of political persecutions he fled in about 1850 to the United States where he played the major role in building a number of residential training schools which began to test the methods and theories outlined in his book, "Idiocy: Its Treatment by the Physiological Method."[2] Subsequently these schools, which developed into our present system of residential schools, deteriorated into asylums and abandoned their former interest in training. Where the schools initially admitted the mildly retarded, they later became populated with the severely retarded and those with unmanageable social problems.

At the turn of the century Doctor Maria Montessori further modified the approach of Itard and Seguin and used her method in succession with the mentally defective, the economically and culturally disadvantaged, and finally the advantaged preschool child. The techniques outlined in her book, "The Montessori Method,"[3] are especially useful in non-residential schools.

From the Department of Pediatrics and the Child Study Center, Children's Memorial Hospital, University of Oklahoma Medical Center, Oklahoma City, Oklahoma.

One of a series sponsored by the Department of Continuing Education, University of Oklahoma Medical Center.

Today in Oklahoma we are seeing a return to the principles of education and care for the retarded which were developed by these three physicians. State training schools are returning to the ideas of Seguin while the method of Montessori is making a tremendous impact on the pre-school education of retarded, culturally deprived, and normal children. The physician interested in comprehensive care of the retarded will gain valuable insight into today's programs, as well as learn about the early history of treatment of the retarded.

Today's physician must also keep abreast of the vast body of information developed by the basic medical sciences. He can do this through any one of several excellent new textbooks. The short paperback entitled "Mental Retardation, A Handbook for the Primary Physician,"[4] prepared by the American Medical Association, presents the broad field in a highly condensed form designed for the busy practitioner. Those interested in more complete and detailed coverage will enjoy either "Medical Aspects of Mental Retardation"[5] edited by Carter or "Prevention and Treatment of Mental Retardation"[6] edited by Philips.

Unfortunately, most physicians get little formal training in the area of mental retardation. Worse yet, they receive less formal experience with comprehensive programs for handicapped children. It is not surprising then, that no adequate book on the concepts and techniques of a comprehensive care program for the handicapped child has been written. Even rehabilitation as it applies to the adult does not exist as a discipline, but as a field of comprehensive services utilizing many groups of health professionals.

Parents faced with the problem of a chronic disabling disorder are often assisted by books written for them in this situation. Fortunately Spock has co-authored another excellent book for the distressed parent. His new book "Caring for the Disabled Child"[7] can be recommended to the parents of any handicapped patient. Fortunately, this multiple-use book can also serve as a reference work for the physician who needs help with specific problems of the handicapped. Similarly parents are often helped emotionally when a physician recommends a well written biography such as Pearl Buck's "The Child Who Never Grew."[8] This story of the mentally retarded child that Pearl Buck and her husband adopted can help many parents evaluate their own child's situation more realistically. There are many such books written by talented parents who have successfully adjusted to the realities of their handicapped children. Such books are invaluable clinical tools of limitless worth that physicians under-utilize. Doctor Spock's newest book lists many references for a variety of specific disabilities.

The modern physician increasingly relies on abstracting services and continuing monograph series. The National Institutes of Mental Health publishes the Mental Retardation Abstracts which are available without charge to the professional worker who is actively engaged in the field of mental retardation, The *Clinics* in *Developmental Medicine* are a series of monographs which present more of the basic science information relevant to the child with a variety of handicaps, with particular emphasis on motor deficits. Occasional Little Club Clinics are quite useful to the practitioner such as one by Richmond Paine on the "Neurological Examination of Children."[9]

Although the first professional interest in mental retardation and handicapped children began 150 years ago, medicine has not shown extensive interest in this area until the last decade. Recent medical advances are finally being collected into a small number of good comprehensive textbooks. The need for more knowledge and books in this area will undoubtedly continue to grow rapidly as more money is belatedly poured into research and services for the handicapped child. □

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Diabetes and the Heart

W. JULIEN BAHR, M.D.*

WHEN WE talk about diabetes and the heart, we are primarily concerned with coronary artery disease due to atherosclerosis. The association of diabetes and early atherosclerosis has long been observed clinically. It is only recently, however, that studies have shown an increased incidence of an abnormal glucose metabolism and diabetes among patients with coronary artery disease. A rare association of diabetes and the heart occurs in the patient with hemachromatosis, but its clinical significance is small compared to the atherosclerosis associated with diabetes.

All methods of evaluating the data have shown the increased incidence of coronary artery disease in diabetes. The Joslin Clinic[1] reports the death rate from coronary artery disease in diabetics as 53.3 per cent compared to a rate of 30 per cent in the general population in the United States. Stearns, Schlesinger and Rudy,[2] using injection techniques on autopsy material noted significant coronary artery disease in 74 per cent of diabetics and only in 37 per cent of non-diabetics. There is a similarly increased incidence of coronary artery disease in diabetics evaluated by history of angina, myocardial infarct, and electrocardiographic abnormalities. This incidence varies from 12 per cent to 40 per cent depending on the criteria used.[3, 4] Possibly, with coronary angiographic techniques, a more accurate incidence can be obtained. A striking confirmation of the effect of diabetes on the heart is illustrated in the diabetic woman. The relative freedom from coronary artery disease in the premenopausal female is reversed by diabetes. A 4:1 male, female ratio of myocardial infarct in the non-diabetic becomes 1:1.3 in the diabetic.

The seriousness of coronary artery disease to the diabetic patient can also be viewed from the standpoint of mortality due to myocardial infarct. Partamian and Brad-

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ley[5] found an early mortality, defined as death within 60 days after the acute episode, of 38 per cent. Mortality from subsequent attacks was 55 per cent. This represents an improvement from 58 per cent and 61 per cent reported in 1956,[6] but it is significantly higher than the 15 per cent and 30 per cent reported in patients not known to have diabetes. In evaluating the five-year survival of diabetics, recovering from an acute myocardial infarct, Partamian and Bradley[5] found 38 per cent lived five years after the first attack and 25 per cent after the second and subsequent attacks. When the diabetic survives a myocardial infarct, in 87 per cent of the cases death is caused by another myocardial infarct or as a result of complications from coronary artery disease. Factors which apparently decrease the five-year survival are long duration of the diabetes, presence of nephropathy, hypertension, and peripheral vascular disease.

Because of the increased incidence of myocardial infarct in the presence of diabetes, the physician must be alert for this complication. It has been emphasized that there is a diminished severity or absence of pain in diabetics with myocardial infarct. The incidence of painless myocardial infarct in patients with diabetes is from 24 per cent[5] to 42 per cent[1] as compared to from 11 per cent to 15 per cent in the non-diabetics. This does not mean that myocardial infarct is symptomless, but rather that symptoms may be atypical. Therefore, the adept physician will entertain the diagnosis of myocardial infarct if congestive failure occurs, or if there is an abrupt and unexplained upset in the control of the diabetes, nausea and vomiting, or unexplained discomfort between the iliac crests and the jaws. Factors that effect the immediate mortality again include the presence of nephropathy (proteinuria or azotemia), congestive heart failure, shock, ketoacidosis, peripheral vascular disease, and long-duration of the diabetes. The early mortality in Partamian's[5] study was not significantly different when hypertension was also present. It is noteworthy that a 67 per cent mortality was found in the young diabetic in the third and fourth decade.

In recent years the opposite side of the coin has been emphasized in that a significant percentage of patients with myocardial infarct have been found to have abnormal glucose tolerance curves. Cohen[8] found abnormal glucose tolerance curves in 33 of 43 patients under the age of 50 with myocardial infarct. This compares with 62 per cent of patients with coronary artery disease studies by Herman and Gorlin[9] who had abnormal glucose metabolism. Although not completely evaluated, it appears that about 20 per cent of patients, following an acute myocardial infarct, will develop clinical diabetes.

There are many important and unanswered questions relative to atherosclerosis and diabetes. We would like to know to what extent atherosclerosis is a pre-diabetic state and whether the pathogenesis of coronary artery disease is the same in both conditions. It also is important to know the relative role played by heredity and environment in order to evaluate the efficacy of diet, the importance of emotional stress, smoking, etc., in the production of atherosclerosis in both the diabetic and non-diabetic patient. At our present state of knowledge, we can only suggest that good control of the diabetes, as measured by fasting and post prandial blood sugars, control of unsaturated fats in the diet, treatment of hypertension and prevention of obesity may retard these complications. None of these measures, however, have been shown to be of unequivocal benefit in the prevention of atherosclerosis and its sequelae. We can be aware of the increased incidence of myocardial infarct in the diabetic patient in order to avoid, if possible, unnecessary deaths. As the factors contributing to coronary artery disease become clearer, we can more rationally hope to prevent this disease in diabetics. □

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State Commission To Tackle Comprehensive Health Planning

—Do Oklahoma's governmental and non-governmental health services lack coordination to the point of being fragmented?

—Are health services inadequate in quantity and quality and in geographic distribution?

—Can overlapping of governmental health services be reconciled and corrected?

—Is equality of health service available to all citizens, regardless of ethnic or economic status, and do they know how and where to obtain needed services?

—What role should neighborhood health centers play in providing health care to indigent and *non*-indigent citizens?

—Can a partnership between governmental and private health agencies be created to achieve comprehensive health planning and a coordinated delivery of health services on a voluntary basis?

Answering these and other perplexing questions will be the ambitious goal of a commission established recently by Governor Dewey Bartlett as a means of implementing Public Law 89-749, "The Comprehensive Health Planning and Public Health Services Amendments Act of 1966."

In reversing the previous action of Governor Bellmon (who placed administrative control of the program in the State Health Department), Bartlett named the state directors of welfare, mental health, health, vocational rehabilitation, state veterans, industrial development, Office of Economic Opportunity, and the medical school dean to an "interagency commission" to carry out the planning process.

The commission members, whose departmental health activities may become the principal targets of their own efforts to coordinate government health services, will be advised by a "State Health Planning Council."

The advisory group, under terms of the Federal law, will be comprised of 30 members, more than one-half of which must represent "consumers of health services." Thus, the medical profession and other health-oriented organizations must find their places within only 14 seats on the council. OSMA's Board of Trustees has nominated 11 physicians to Governor Bartlett as candidates for appointment. The Board requested Bartlett to consider appointing more than one physician " . . . because of the medical profession's predominant role in the delivery of health services to the people of Oklahoma . . . "

The policy-making commission will be headed by Bartlett and Vice-Chairman A. B. Colyar, M.D., Commissioner of Health. The staff director of the planning project will be Jack Boyd, a respected public administrator who is presently employed by the State Health Department.

Medical association leaders are cognizant of the Federal law's stated intention of " . . . marshaling all health resources . . . but without interference with existing patterns of private professional practice of medicine, dentistry, and related healing arts." However, there is apprehension about the unstated Federal motivation behind the program and genuine concern that the end result of "planning" will lead to more government-financed inroads into the private sector of health services.

Despite these anxieties, though, organized medicine—from the AMA on down—recognizes the need for health planning on a voluntary basis as a means of keeping abreast of the nation's most dynamic industry. It is expected that the OSMA will cooperate with the planners in every possible way to achieve realistic goals and workable mechanisms for improved health services.

P.L. 89-749

The law's subsections include:

—Grants to the state agency to administer statewide comprehensive planning for health services, facilities and manpower ($94,000 has been received in Oklahoma to date).

—Grants for comprehensive regional, metropolitan, or other local planning programs compatible with the state plan.

—Project grants for costs of training, studies, and demonstrations in comprehensive health planning.

—Grants for comprehensive Public Health Services (funds will not be restricted by disease or problem categories).

—Project grants for providing services to meet needs on a geographic basis, or to initiate new programs, or to develop innovations.

H.R. 6418

Meanwhile, although the program authorized by P.L. 89-749 is yet to materialize, the Administration in Washington is processing new legislation, H.R. 6418, to extend the planning program for at least three additional years and to broaden the law's provisions to include such items as the Federal licensing of medical laboratories (Congressman Jarman of Oklahoma amended the bill in committee to provide that states may be exempted from Federal laboratory licensing if local laws are equal or more stringent than Federal requirements).

Implementation

Tentative plans for implementing Oklahoma's planning program call for the expeditious submission of a "plan for planning" for Federal approval, the appointment of a committee to subdivide the state into "medical market areas" (for planning and hospital construction purposes), and the appointment of the State Health Planning Council.

In addition, a grant has been received from the Federal government to conduct orientation courses on the planning process in Tulsa and Oklahoma City. The courses will be conducted by the Extension Division of the University of Oklahoma.

Medical association interest in health planning legislation is evidenced by a decision of 14 state medical societies to jointly conduct a "Western Conference on Future Directions and Decisions in Medical Care" scheduled for November 10th-12th, 1967 in Chandler, Arizona. □

Trustees Approve Laboratory License Bill

A medical laboratories licensure bill was approved by the OSMA Board of Trustees during a special called meeting at the OSMA Executive Office Building in Oklahoma City on July 16th.

Doctor Raymond F. Hain, Chairman of the OSMA State Legislative Committee, reviewed the bill which will provide for licensure of medical laboratories and medical laboratories personnel. He stated that the bill was a compromise effort on the part of several organizations who were able to arrive at a set of attainable licensure standards.

The proposed legislation, drafted by the "Interorganizational Committee for Improved Clinical Laboratory Performance in Oklahoma," was purposely designed to leave many features of implementation to regulations rather than writing them into law. Provision was also made for the continuance of existing laboratories and to make it possible for the medical profession to assess personnel training programs.

Doctor Hain stated that the formation of this interorganizational committee was an historical event in itself. In other states, medical and technical groups have submitted competitive bills to the legislature. He pointed to Missouri as an example. In that state, the legislature was confronted with seven separate bills.

The committee consists of representatives from the OSMA, Oklahoma Association of Pathologists, State Health Department, Oklahoma Hospital Association, Oklahoma Society of Medical Technologists, American Medical Technologists, International Society of Clinical Laboratory Technologists, American Association of Bioanalysts, and the Oklahoma Osteopathic Association.

The Board of Trustees voted to endorse the bill as presented and to present a letter of endorsement to the interim Legislative Council.

Budget

In another action the Board approved a revised budget for OSMA's operations during this fiscal year. The revision was necessary to accommodate the association's participation in a massive health-economic education program. Budgetary adjustments will make it possible for OSMA to contribute to the program out of current operational funds rather than through depletion of savings accounts.

Doctor C. Riley Strong, member of the Appropriations and Audit Committee, stated that cutbacks in some of the budgeted items would make some $11,000 available for use in financing the program originated by the Health Economic Task Force and approved by the House of Delegates at its 1967 annual meeting.

The program will be an effort to educate the people of the state to the necessity of planning and budgeting for good health insurance coverage. Economic benefits of private financing versus taxation will be stressed.

Health Careers

The Board heard and accepted a report from Doctor Scott Hendren, OSMA President-Elect, reviewing the background of the Oklahoma Council for Health Careers, a proposed organization to coordinate a continuing health career recruitment program for the health sciences. He pointed out that $2,500 had been approved to assist this program upon the recommendation of the Board of Trustees Study Committee. Since that time a set of bylaws and a budget have been prepared for the Council. OSMA's proportionate share would amount to $4,000 annually. (Further OSMA appropriations will be considered at a later date.)

On July 5th representatives of the Council met with Kelly West, M.D., Acting Director of the Regional Medical Program, and it was agreed that RMP would participate in the program by furnishing funds to provide staff and office space, but policy decisions would be left to the Board of Directors of the Oklahoma Council for Health Careers.

As provided by the bylaws of the health careers organization, the OSMA is now entitled to two voting delegates on the policy-making council. By providing an additional $1,500, the association will be entitled to a third delegate.

OMPAC

A $1,500 expenditure was authorized from a special savings account to help finance a statewide OMPAC political education conference on October 21st-22nd. The request for the aid was made by Doctor Rex Kenyon, Chairman of the OMPAC Board of Directors.

Medical School Loan Fund

OSMA Executive Secretary reported that the association has transferred $5,000 from the OSMA Scholarship and Loan Fund to the OU Medical School Student Loan Fund. The transfer was authorized by the House of Delegates in May to assist the school in raising matching funds for the Federal Loan program.

In addition to this amount, some $2,700 was received from OSMA member physicians as a result of a letter soliciting contributions. Doctor James L. Dennis reported by correspondence that to date the school

has about $19,000 available or pledged to match federal funds. This would create a loan program of $190,000 under the matching-money formula for the coming academic year.

Other Actions

In other actions, the Board:

- Authorized the Legislative Committee to draft legislation defining "blood and other human tissues as services rather than commodities."
- A report concerning the future existence of Chickasha's Jane Brooks' School for the Deaf was received and a letter of endorsement of the school's highly-regarded program was authorized.
- Three physicians were nominated for one appointment to the State Board of Medical Examiners. Nominated were: Francis R. First, M.D., Checotah; E. K. Norfleet, M.D., Tulsa; and David Carson, M.D., Miami.
- President Maxwell A. Johnson, M.D., nominated and the Board of Trustees appointed the following members of the Executive Committee: Scott Hendren, M.D., Oklahoma City; E. H. Shuller, M.D., McAlester; C. M. Hodgson, M.D., Kingfisher; Malcom E. Phelps, M.D., El Reno; Ennis M. Gullatt, M.D., Ada; Harlan Thomas, M.D., Tulsa; and Francis A. Davis, M.D., Shawnee.
- Doctor Johnson's appointments to the following standing committees were approved by the board: Annual Meeting Committee, Constitution and Bylaws Committee; and Medical School Liaison Committee.
- The board reviewed developments in the implementation of a comprehensive Health Planning Program in Oklahoma (the result of federal legislation) and delegated liaison activities to the Governmental Relations Committee.
- The OSMA Council on Professional and Intervocational Relations was asked to develop a policy statement for board consideration regarding medicine's relationship with podiatry. □

Regional Postgraduate Courses Announced

On Tuesday, September 12th, McAlester will be the site of the first Regional Postgraduate Education Course, officially launching the eighth consecutive year for OSMA planning and sponsorship of the decentralized medical education reviews.

Nine courses will again be conducted in this year's series, all during the months of September through November. Until last year, courses were conducted during the months of January through April.

The four subjects to be presented throughout the state this year are: "Respiratory Infections"; "Diabetes"; "Coronary Artery Disease"; and "Psychiatric Tools for Everyday Practice."

In all, a total of 50 Regional Postgraduate Courses have been successfully conducted during the past seven years, with an average attendance of 31 physicians. The OSMA's Council on Professional Education and the University of Oklahoma's Department of Postgraduate Education are responsible for planning and conducting the yearly series.

According to John W. Drake, M.D., Chairman of the OSMA's Council on Professional Education, any member of the Oklahoma State Medical Association may attend any of the offered courses. He cited that preregistration can be made at the OSMA Executive Office for any of the courses by mailing a check in the amount of $7.50 and indicating the location where the preferred course is being held.

All courses begin at 4:30 p.m., with two hours of lecture, followed by dinner and another two-hour period of lecture and discussion. The meetings are held at selected decentralized meeting sites across the state. The purpose for late afternoon scheduling of each event is simply an effort to conserve the practicing physician's time.

Each course is approved for four hours credit by the American Academy of General Practice. The registration fee of $7.50 covers the complete scientific program as well as the dinner.

The subject to be offered at the September 12th, McAlester Regional Postgraduate Education Course will be "Respiratory Infections." The meeting will be held at the Holiday Inn Motel. The program for this course is as follows:

4:00 p.m. Registration

4:30 p.m. *Infections of Upper Respiratory Tract*
Harold G. Muchmore, M.D.

5:30 p.m. *Acute and Chronic Bronchitis*
James F. Hammarsten, M.D.

6:15 p.m. Dinner

7:30 p.m. *Pneumonia*
Everett R. Rhoades, M.D.

8:15 p.m. *Panel: Complications Associated With Respiratory Infections*
Harold G. Muchmore, M.D.
James F. Hammarsten, M.D.
Everett R. Rhoades, M.D.

In addition to the opening program, the remaining eight regional courses will be held on the following dates, with the corresponding subjects offered, and at the locations indicated:

September 19th—"Diabetes," Woodward (Yeager's Western Restaurant)

September 26th—"Coronary Artery Disease," Ada (Valley View Hospital)

October 10th—"Psychiatric Tools for Everyday Practice," Enid (Mid-Western Inn)

October 17th—"Diabetes," Muskogee (Tradewinds Motor Hotel)

October 24th—"Coronary Artery Disease," Miami (Thunderbird Motel)

November 7th—"Respiratory Infections," Ponca City (Quo Vadis Motor Hotel)

November 14th—"Psychiatric Tools for Everyday Practice," Lawton (Lawton Golf and Country Club)

November 21st—"Coronary Artery Disease," Edmond (Quality Courts Motel) □

Tour Europe With OSMA Group

London, Paris, Lucerne, Rome . . . all are included on a 23-day tour of Europe being sponsored by the OSMA. The period July 17th-August 7th, 1968, will see Oklahoma physicians and wives visiting these and other exotic places. Several reservations have already been made.

The tour was officially approved by the OSMA House of Delegates at its May meeting in Tulsa. Jet trans-Atlantic economy class transportation will be provided by Trans World Airlines. Transportation in Europe between cities will be by air with sightseeing by motorbus and private cars. An English-speaking guide will be provided.

Accommodations are in first class hotels with twin or double bed rooms and bath. Single rooms are available at a slight extra charge. The tour price includes two meals a day.

The tour has been structured to allow for much individual leisure time, personal sightseeing and shopping in all major cities, as well as opportunities to lunch and dine at leading gourmet restaurants.

Two plans have been arranged. One is a "short" 16-day tour visiting London, Paris, Lucerne and Rome. The second is a seven-day extension to visit Florence, Venice and Berlin. The price of the 16-day basic tour from Oklahoma City and return is $800 and $791.50 from Tulsa and return. The 23-day tour will cost $949 from Oklahoma City and $940.50 from Tulsa.

Physicians wishing to join the tour in New York and leave it there on return may pay $680 for the 16-day basic tour or $829 for the extended 23-day tour.

Reservations for the tours are now being received by the OSMA Executive Office and by the Tulsa County Medical Society. A deposit of $100 per person is required with each reservation; this is fully refundable if cancellation is made 35 days or more prior to the departure date from New York. Final payment must be made in full 45 days prior to departure from New York.

The "Fly Now, Pay Later" plan can be used with ten per cent down and up to 36 months to pay the balance. Physicians wishing to use this plan should make arrangements well in advance.

A copy of the colorful brochure, "OSMA European Tour," is available upon request. All inquiries should be directed to: The Oklahoma State Medical Association, P.O. Box 18696, Oklahoma City, Oklahoma 73118 or to Tulsa County Medical Society, 104 Utica Square Medical Center, Tulsa, Oklahoma 74114.

A summary of the Tour is as follows:

July 17th. Depart New York for London.

July 18th. Arrive London in the morning, clear customs, go by motorcoach to see Windsor Castle and Runnymede. Thence to London, check in at the Hotel Picadilly. Remainder of the afternoon at leisure.



Paris, France

July 19th. Morning tour of London's famous East End, including Picadilly Circus, Buckingham Palace and the Changing of the Guard, Westminster Cathedral, Knightsbridge, Houses of Parliament, Whitehall, and Trafalgar Square. Afternoon tour to St. Paul's Cathedral, Cheapside, Mansion House, London Bridge and the Tower of London.

July 20th. All day free for personal activities.

July 21st. Full-day tour to Stratford-On-Avon, Oxford, and the London countryside.

July 22nd. Leisure time until departure of the flight to Paris, transfer to the Hotel LeGrand, with balance of the day free for Parisian sightseeing and shopping.

July 23rd. Tour to Versailles Palace, seeing the stately gardens and foundations, and fabulous Palace of the Kings. Afternoon free.

July 24th. At leisure in Paris for personal activities.

July 25th. An historical tour of Paris to numerous landmarks—Tuileries, the Louvre Museum, Notre Dame Cathedral, Sorbonne, Luxembourg Palace, the Bastille, Montmarte, etc. Afternoon tour to the famous Eiffel Tower, Napoleon's Tomb, famous Paris squares and bridges, the Champs Elysees, and the Arc de Triomphe.

July 25th. By air from Paris to Zurich, continuing by deluxe motorcoach to Lucerne and checking in at Hotel Grand National. The remainder of the day at leisure.

July 27th. Morning free in Lucerne, afternoon a half-day excursion to the summit of Mount Pilatus for a spectacular panoramic view of the Alps. That evening a tour party at the famous Stadtkeller Restaurant, featuring special folk music and Swiss entertainment.

July 28th. By motorcoach from Lucerne to Zurich, thence by air to fabled Rome and the Hotel Mediteraneo. Balance of the day is free.

July 29th. Sightseeing tour all day to Roman landmarks, the Vatican, museums, the famous Egyptian and Etruscan museums, the Villa Borghese, the Colosseum, the Basilica of St. Paul and the Caracalla Baths.

July 30th. All day in Rome free for personal activities.

July 31st. Morning free, with afternoon tour to the Villa D'Este and environs of Rome.

August 1st. Main tour flies back to New York. Extended tour leaves by train for Florence and registers at the Hotel Carlton.

August 2nd. All day tour of the famous art galleries, churches and squares of Florence.

August 3rd. By train to Venice and the Grand Hotel, an afternoon

(Continued on page 475)

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tour by gondola along the Grand Canal and other canals, visit the Frari Church.

August 4th. A walking tour of Venice in the morning to the famous Bridge of Sighs, with the afternoon at leisure.

August 5th. By air from Venice to Berlin, check in at the Hotel Zellermayer. Balance of the day at leisure.

August 6th. An all-day tour of Berlin's famous landmarks.

August 7th. By jet from Berlin to New York.

Oklahoma State Medical Association officials are attempting to arrange postgraduate activities in order to allow physicians to consider the trip a business investment. Tours of several hospitals are planned.

Not included in the price of the tour is one meal each day, passport, personal items, foreign airport taxes, laundry, phone calls, beverages (other than coffee and tea at breakfast), and insurance. Each person is allowed 44 pounds of baggage. □

Health Career Recruitment Planned

Professional and health-related organizations are in the final stages of creating the "Oklahoma Council for Health Careers," a jointly sponsored organization whose overall purpose will be to coordinate a central effort to offset the growing shortages in health sciences personnel of all types.

The Oklahoma State Medical Association and its auxiliary, the Oklahoma Hospital Association and its auxiliary, and the Oklahoma State Nurses Association were the principal organizations involved in the initial planning and financing of the combined recruitment operation, but other groups such as the League for Nursing, medical technologists, x-ray technologists, dieticians, physical therapists, and medical librarians have participated by making financial commitments.

Moreover, the Oklahoma Regional Medical Program (OU Medical Center) has offered funds to provide for a full-time staff and office space.

Other health organizations, such as the Oklahoma State Dental Association, Oklahoma Pharmaceutical Association, and the Oklahoma State Nursing Home Association, are expected to support the careers council as soon as policy decisions can be made. The Oklahoma Council for Health Careers will be officially formed at a meeting this month of representatives from the participating health organizations.

Objective Stated

According to the bylaws of the prospective organization, the objectives of a conjoint recruitment effort are:

1. To serve as a clearing house where reliable information can be gained relative to opportunities, qualifications, accredited schools, scholarships, etc. in health professions.

New OSMA Folder Available

"Picture Yourself As A Future M.D.," a new OSMA medical student recruitment folder, may be ordered in reasonable quantities by physicians or medical societies who wish to attract bright students into medicine as a career. The folder describes academic standards, costs, financial assistance programs, methodology for admission to the University of Oklahoma School of Medicine, and the various phases of medical training. Order from OSMA, Box 18696, Oklahoma City, 73118.

2. To create a channel through which services and activities of all participating organizations in the recruitment of people for the health professions may be coordinated.

3. To work toward better understanding on the part of guidance personnel and parents as to the academic background, interests, and aptitudes students should possess before undertaking a health career.

4. To conduct a continuing statewide publicity and promotion program on health careers.

5. To encourage and support the development of an adequate number of educational and training facilities and opportunities to accommodate qualified applicants.

6. To solicit statewide community support for the program.

The organization's specific activities will be guided by a Board of Directors representing the participating organizations, but coordination will be established with the Regional Medical Program, the OU Medical Center, and perhaps with the Oklahoma Health Sciences Foundation.

Health organizations will still be responsible for recruitment activities in their own fields, but it is hoped the combined purchasing and supportive power of a central recruiting organization with a full-time recruiting staff will have a greater impact on the attitudes of young Oklahomans. □

Medicare Makes Small Impact on Patient Volume

With the close of business on July 1st, Medicare lumbered into its second year of operation. To be expected, magazines, newspapers and government "information" outlets have publicized a rash of reports about the effect of Medicare's first year.

Many of these reports have translated Medicare's impact into money. The Department of Health, Education and Welfare points with pride that Part B—medical insurance payments—have totalled more than $650 million for the year.

The number of doctor bills partially paid—due to the $50 deductible and 20 per cent coinsurance—will be highly publicized to prove the great benefit that the program has given to the elderly.

During the campaign to force Medicare into law its proponents constantly referred to the "19 million Americans over-65 years of age that cannot afford proper medical care." It was predicted that over-65 patients would flood the medical facilities of the country as soon as the program was enacted.

A review of Medicare's *actual* impact, however, is found in the recent report of the National Disease and Therapeutic Index. N.D.T.I.'s Medical Report No. 25, entitled "The Current Impact of Medicare on U.S. Private Medical Practice," termed the

increase of elderly patients as "modest" and stated that more than half of their reporting physicians had no rise in patient volume.

The N.D.T.I. statistics are based on reports from a cross section of 1,500 physicians in private practice who are located throughout the U.S. Once each quarter the physicians report on all private patient contacts occurring during a forty-eight hour period. These reports are then compiled to give a statistical picture of medical practice.

The report compares the period July, 1965-March, 1966 with July, 1966-March, 1967. This is a pre-Medicare period compared to the first nine months of medical practice under the program.

The report shows only a nine per cent increase in the number of visits by patients 65 and over after Medicare was enacted. During this same period the number of patient visits by those under 65 decreased by minus six per cent. The total percentage change between the two periods results in a minus three per cent decline in all patient visits.

The report points out that the percentage of office calls by the over-65 group remained the same. The big percentage change—up 23 per cent—was in hospital and nursing home visits. Numerically, the office calls were down enough to off-set the 23 per cent increase in hospital and nursing home calls and to reduce the total visit increase for over-65 patients to only nine per cent.

"In spite of this obvious increase in elderly patients seen in institutions," the report stated, "the volume has been less than many anticipated." It was epected that the start of extended care services on January 1st of this year would lead to a heavy influx of elderly patients into hospitals in December of 1966 (to meet the three-day hospitalization requirement) but the greatest period of Medicare utilization was in October of 1966.

In referring to the specialties the report said, "Increases in elderly patient load attributable to Medicare have occurred most in General Practice, Urology and Otolaryngology."

Certain specific health conditions have shown above average increases in the number of visits. "Not surprisingly," the report stated, "most of these relate to the elderly segment of the population and to hospital treatment, though it is interesting that the number of hospital surgical procedures performed has not increased."

The N.D.T.I. report tends to support the medical profession's contention throughout the Medicare legislative campaign that the over-65 population was receiving needed medical services regardless of ability to pay. □

Committee Accepts Revisions in Abortion Bill

The Oklahoma Legislative Council's Committee on Public Health and Welfare has accepted six amendments proposed by the OSMA to improve the abortion bill that is now pending in the state legislature.

Doctor C. Riley Strong, El Reno, stated, "The OSMA is neither for nor against this legislation. Our only desire is to protect our profession and to prevent Oklahoma from becoming known as an abortion mill."

While two of the proposals were only word changes, the other four provide certain requirements to be met before an abortion could be performed.

The major change recommended would require any woman receiving an abortion to be a resident of Oklahoma. Doctor Strong told the committee, "We strongly recommend that this provision be included in the final bill."

Representative Curtis Lawson, (D-Tulsa), author of the original bill, accepted this amendment but questioned its constitutionality. The remaining five proposals he accepted without objection.

One of the amendments would require those seeking a therapeutic abortion to file a case history of the woman with a "Committee on Therapeutic Abortion, such committee appointed in good faith by the medical staff of a hospital accredited by the Joint Commission on the Accreditation of Hospitals or the Committee on Hospitals of the American Osteopathic Association and composed of not less than three (3) members of the active staff of such hospital"; and the committee would establish whether or not the case met the requirements as set out in the law.

Another of the amendments provided, "In cases of rape or incest, information must be obtained from the district attorney by the attending physician that there is probable cause to believe that the alleged violation occurred, such information not to be evidenced in any other proceeding."

It was also recommended that the section on emergency abortions be removed from the original bill. Doctor Strong explained, "There is no such thing as an emergency abortion. If the patient is bleeding, for example, you would then be treating a threatened or incomplete abortion . . ."

The original bill is currently in the Senate Judiciary Committee where it was held at the end of the last legislative session. It should receive action early in the 1968 session when the legislature convenes in January. □

Social Security Disability

(Continued from Page 437)

- There are special liberalized eligibility requirements for persons who become disabled by blindness before age 31 and for blind persons aged 55 and over.
- Benefits begin with the seventh full month of disability.
- Benefits are the same amount that retirement benefits would be if the worker were 65.
- Benefits last as long as the disability continues or until retirement benefits start.
- An adult disabled since before age 18 may be eligible for "childhood disability" benefits if his parent covered under social security dies or becomes entitled to retirement or disability benefits.
- All applicants are considered for vocational rehabilitation services.—*J. Floyd Moorman, M.D.* □

President's Page . . .

(Continued from page 438)

restriction. They should not be inhibited in their gestation by regulation that they conform to present policy. This is not to propose that innovation be implemented before a policy declaration is made. It is rather to establish a proper sequence of invention to policy rather than the reverse, without which, changes in our structure or operation are impossible."

Here we have true leadership in action. Doctor Hudson urges us to anticipate the health needs of today's society and to develop innovations as needed. We have been fortunate indeed to have Doctor Hudson at the AMA helm this past year.

Doctor Rouse continues on where Doctor Hudson stops. This excerpt is from his inaugural address:[2]

"As physicians, we must take the lead and rally other groups to our support in searching out deficiencies in health services and eliminating them through the establishment of whatever programs or facilities are demonstrated to be needed. Leadership will be provided in these areas of community planning and the provision of community health services for all people. The only undefined factor is the source of that leadership. If it is not the physicians of the community, it will be the government in one of its many forms.

"Americans are a people to whom much has been given. From them, much is demanded.

"Maintaining and strengthening the freedoms that have been passed to this generation is not easy. The answer is not apathy but courage, action, and the willing acceptance of responsibility. The highest level of citizenship is not attained by expanding government welfare rolls but by efforts of people to build their own future and earn their own security.

"Wealth, whether measured in material or spiritual coin, is not bestowed by government, no matter how benevolent. It can only be earned through individual effort.

"As physicians, we too are people to whom much has been given. And from us much is required. We have been entrusted, in the past, with the responsibility for the health of a nation. Now there are those who feel that we have not lived up to that responsibility, that we have not done the job. And so, they would take that responsibility from us and put it into other hands.

"What we do in the next relatively few years, as the American Medical Association and as the individual physicians of the United States, will determine where the leadership of medicine ultimately will reside, and whether the freedom of medicine ultimately will endure.

"The year that lies immediately before American medicine should be characterized by sober optimism, courage, determination, and fruitful action. The life of the true physician is one of continued observation, study, and learning, and certainly we have had opportunity to learn much in recent decades. The motivation of the true physician—service to mankind—has in it the forces for enthusiastic, vigorous, dedicated, and successful effort.

"Most earnestly and sincerely do I invite you to participate with me, frequently and deeply, in the tonic of hard work.

"The times call for a better conquest of inner space, for analysis and recognition of the strength and full potential that lies within our Association and within the individuals who are its members. And we must not only analyze and recognize these latent powers, but also utilize them to the very best of our concerted ability.

"I have boundless faith in the physicans of the American Medical Association, and in all other sincere American citizens.

"We must not fail! We shall not fail!"

From these stirring remarks about the AMA, Doctor Rouse turns to us in our local environment in his report to the House of Delegates.[3]

"Finally, we must recognize and willingly accept the fact that it is the prime responsibility of physicians, at the local, state and national level, to take the initiative in furnishing leadership in analyzing total health care needs and in implementing necessary solutions to demonstrated health care problems. One suggestion I have made to the Board of Trustees is that it consider setting up a series of regional conferences for presidents, presidents-elect, speakers of the Houses of Delegates, and other top officials of state and county societies—perhaps for those within a 500-mile radius of the meeting location. At these meetings, leaders of medicine at the local levels could exchange ideas and exchange possible solutions to their individual problems, many of which beset many different societies. We are all familiar with the CPC—the Clinical Pathological Conference. I suggest a new type of CPC—a Common Problems Conference, on a regional basis.

"Our experience, our training, our motivation, all uniquely equip us to be the true leaders in the field of health. Good-humored, broad-minded, enthusiastic work in providing that leadership is the order of the day for all of us. As we have in the past, we shall gladly respond to requests from government or from any other source for advice on health matters. As we have done in the past, we shall be willing workers in health projects regardless of where they might be initiated, such as the Volunteer Physicians for Vietnam program. But, as in the past, we shall insist that we be approached in good faith, with the assurance that our freedom of judgment and freedom of action will be preserved.

"It has always been this way. The people who have approached medicine for help, for advice, or for cooperation have met opposition only when their approach is made in such a way that our freedom—and thereby the best interests of the public we serve—has been threatened."

With Doctor Hudson and Doctor Rouse leading us we must be inspired to give that little something extra to our professional societies whenever we may be called upon. □

[2]Rouse, Milford O., M.D., "To Whom Much Has Been Given . . . " JAMA 201: 169-171 (July 17) 1967.

[3]Rouse, Milford O., M.D., Report to the House of Delegates, JAMA 201: 172-175 (July 17) 1967.



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Tulsa County Society Awards Scholarships

The Tulsa County Medical Society recently awarded $3,000 in scholarships to eight students of medicine, nursing and medical technology for the 1967-68 school year.

Larry M. Prater, a sophomore at the University of Oklahoma School of Medicine, received the Anna Luvern Hays Memorial Scholarship of $600.00. The award is named in memory of the Tulsa pediatrician who died in 1965 and utilizes income from bequests made to the medical society scholarship fund in her will.

Three scholarships were given from cash gifts to the scholarship fund by the Woman's Auxiliary to the Tulsa County Society. These recipients were: Janice Elaine Clark, a freshman at the University of Oklahoma School of Medicine, $600.00; Linda Whittington, a second-year student at Hillcrest Medical Center School of Nursing, $150.00; and, Joyce Ann Hyslop, a second-year student at St. John's Hospital School of Nursing, $150.00.

Other awards made were: William E. Stipe, a sophomore at the University of Oklahoma School of Medicine, $600.00; G. Bryant Boyd, a sophomore at the University of Oklahoma School of Medicine, $600.00; Betsy Foree, a second-year student at Watts Hospital School of Medical Technology, Durham, North Carolina, $150.00; and Dianne Smith, a first-year student at the University of Oklahoma School of Nursing, $150.00. Stipe, Miss Whittington and Miss Foree also received scholarships from the Tulsa County Medical Society last year.

A surplus of $32,500 from the mass immunization for poliomyelitis sponsored by the society in 1963 resulted in the establishment of the scholarship program. Awards are made only to Tulsa county residents who must be in schools of medicine, dentistry, nursing, pharmacy and other paramedical sciences.

Donald L. Brawner, M.D., President of the society, said the resouces of the scholarship fund were doubled this year by a gift of $31,242.09 from the estate of the late Anna Luvern Hays, M.D. The Woman's Auxiliary also gave another $912.84 for scholarship purposes □

Medical Students Receive Research Fellowships

Nineteen students at the University of Oklahoma School of Medicine have been awarded student research fellowships for scientific studies to be conducted during vacation or part-time during the academic year 1967-68.

Most of the fellowships, carrying an average stipend of $775, are financed by a National Institutes of Health general research support grant. Others are made available by Lederle Laboratories and the Council for Tobacco Research.

Doctor Florene C. Kelly, Student Research Committee chairman, listed the following NIH research fellows and the departments in which they will work:

Second year students—Nathan Edward Bradley, Goodwell, pediatrics; Roy Nathan Grantham Jr., Gage. and Lynn Harrison Jr., Oklahoma City, physiology; James L. Morris, Oklahoma City, and James Stevens Thompson, Morrilton, Arkansas. medicine; and Gerald Albert Snider, Tulsa, and Neal Suthers, Arnett, biochemistry.

Third year students—Bruce A. Darrow, Oklahoma City, Joseph N. Freund, Lawton, and James Richard McCurdy, Purcell, pharmacology; Carl C. Gill, Oklahoma City, and Rayburne W. Goen Jr., Tulsa, surgery; Donald R. McCaffree, Stillwater, medicine; Hans Peter Norberg, Tulsa, anatomy; and Stanley C. Jones, Plainview, Texas, dermatology.

Fourth year—Raymond L. Cornelison, Long Beach, California, medicine.

Lederle fellowships went to Margaret Cox, Checotah, in microbiology, and Earl F. Johnson Jr., Oklahoma City, biochemistry. A Tobacco Research award was given George H. Thompson, Oklahoma City, in physiology. All three will be sophomores. □

BOOK REVIEWS

THE PAPERS OF ALFRED BLALOCK, by Mark M. Ravitch, Editor. (Vol. 1, 66 — 1123 pp., Vol. 2, 9 — 1127-2026 pp.), illustrations and tables. Baltimore, Maryland: The Johns Hopkins Press, 1966. $50.00.

This massive (2,097 pages), two-volume work concerns one of the leaders of modern surgery, Alfred Blalock, and is edited by another surgical leader, Mark M. Ravitch, a 1930 graduate of the University of Oklahoma who is currently Professor of Pediatric Surgery at the University of Chicago. The initial portion provides a biographical sketch of Blalock's career. All his professional career was spent at two institutions — Johns Hopkins in Baltimore, and Vanderbilt in Nashville. Blalock graduated from Johns Hopkins in 1922 and served as intern and assistant resident there. In 1925 he became resident surgeon at the Vanderbilt University Hospital. He progressed up the academic ladder until he became Professor of Surgery at Vanderbilt in 1938 under the late Barney Brooks, Professor and head of the Department. In 1941, he returned to Johns Hopkins as Professor of Surgery and Head of the Department where he remained until his untimely death in 1964. In the biographical section and in the curriculum vitae at the end of Volume 2, Blalock's several notable contributions to medicine and his stature as a teacher and as a person are clearly pointed out. The chapter entitled, "A Medical History of Alfred Blalock" makes interesting reading, particularly for those who knew him. As the editor states, "Blalock suffered more illnesses in his lifetime than are given to most to endure". In addition to pulmonary tuberculosis, he suffered from a wide variety of major illnesses. His final illness resulted from a malignacy arising from the left ureteral stump remaining after a nephrectomy 21 years previously for congenital hydronephrosis.

Three selected papers by Blalock dealing with two of his major contributions, shock and cardiovascular

surgery, are included in the next portion. Other sections include a list of residents in surgery who completed their training under Blalock and their present positions and a section on biographical vignettes of co-authors of papers with Blalock. The remainder is divided into the Vanderbilt Years and the early and late Johns Hopkins Years which contain a reproduction of 269 papers of Blalock from the literature, making up 1,854 of the total 2,097 pages.

There can be little argument about the significance of Blalock's contributions in all phases of surgery including the training of many persons who occupy important positions in surgery. It is likely that Ravitch knew Blalock as well as anyone, having been a member of the fulltime surgical staff at Johns Hopkins except for two brief periods after completion of his house officer training in 1943 until February, 1966 when he moved to Chicago. However, it is the duty of the reviewer to "call them as he sees them". One gets the impression that the editor has fallen prey in a certain degree to the affliction known as "tunnel vision of the surgeon" as well as to the disorder of provincilism known as "the Hopkins syndrome". In view of the editor's long association with the Department of Surgery at Johns Hopkins this is perhaps understandable. In regard to the former, in describing an academic career spanning 33 years at two such outstanding institutions the editorial treatment of colleagues other than those in the field of general surgery seems unduly scanty. Blalock often mentioned the great influence these associates in other fields had on his career. In the biographical sections the reader gains the impression that professional success was possible only if a person became "The Resident (which is consistently capitalized in the biographical sections) in general surgery at Hopkins". For example in this regard, the editor cites the names of certain of Blalock's medical school classmates — such as Wiley Forbus, Ashley Weech, Chester Keefer, Irvine McQuarrie, Katherine Dodd and others — many of whom subsequently became as distinguished in their respective fields as Blalock did in his. This is followed by the statement in reference to certain graduating classes, "No members of this class became Resident in Surgery".

The biographical section seems rather prejudically weighted toward Blalock's Johns Hopkins experience whereas a review of accomplishments and of his papers indicates the importance of his Vanderbilt experience in the opinion of this reviewer who had the privilege of training in both Baltimore and Nashville. The most important work for which Blalock is known, namely, his studies of shock and the experimental development of the operation to which his name is attached, the Blalock-Taussig procedure for pulmonary stenosis, was carried out or initiated at Vanderbilt. Of the total cited papers, 128 were published from Vanderbilt during his 16 years there and 140 from Johns Hopkins during his 23 year association. Despite certain implications to the contary concerning Blalock's relationship to his chief at Vanderbilt, Barney Brooks, the genuine respect and affection Blalock held for Brooks are amply documented — his telegram to Brooks at the time of the death of a colleague, "You are the master and we all worship you" and the nature of his paper in the Transactions of the American Surgical Association at the time of Brook's death.

Ravitch makes numerous references to the role of Vivien Thomas, a young Negro man who came to work for Blalock in the experimental surgery laboratory at Vanderbilt in 1930 and who accompanied him to Hopkins in 1941. As pointed out in the biographical vignettes, "Vivien became a nonpareil of technical laboratory surgery and the teacher of a generation of surgeons in laboratory techniques". For example, at the time of the first operation for tetralogy of Fallot in 1944, Vivien was present in the operating room standing by "to offer suggestions when asked". Vivien also designed an instrument widely used in cardiac operations but he is listed as a collaborator on two papers with Blalock (published in 1941 and in 1953).

There are several typographical errors such as "president in Surgery at Hopkins" on page XIX, misplacing of parentheses (page XXXIX) and others.

Anyone ever associated with Johns Hopkins or Vanderbilt physicians interested in shock and in cardiovascular surgery, and students of surgical history will find many portions of this two volume work of considerable interest and will be indebted to Ravitch and his collaborators for this fine achievement. Because of the price and the ponderous size, it is unlikely that physicians other than some in these groups will own it. Although it is convenient as a reference source to have all of Blalock's papers collected in two volumes, both the size and cost could be reduced by reproduction of only the more important papers and by listing the source information

DEATHS

MARGUERITE M. BAKER, M.D.
1892-1967

A retired Oklahoma City physician, Marguerite M. Baker, M.D., died July 23rd, 1967.

A native of Anthony, Kansas, Doctor Baker was a 1927 graduate of the University of Oklahoma School of Medicine. She had been in general practice in Oklahoma City since 1929.

Recognizing her contribution to humanity and the medical profession, the Oklahoma State Medical Association presented Doctor Baker with an Honorary-Life Membership.

ROBERT D. HARGROVE, M.D.
1918-1967

A former Pawnee physician, Robert D. Hargrove, M.D., died in Oklahoma City July 31st, 1967.

A graduate of the University of Oklahoma School of Medicine in 1950, Doctor Hargrove established his general practice in Pawnee, Oklahoma in 1951. He recently moved to Oklahoma City where he was connected with the Department of Public Welfare. □

for the remainder so that those interested in a particular article could obtain it from the orginal journal. *Harris D. Riley, Jr., M.D.*

THE THYMUS: EXPERIMENTAL AND CLINICAL STUDIES (Ciba Foundation Symposium), by G. E. W. Wolstenholme and Ruth Porter, eds. 538 pp., 96 illustrations, $15.00. Boston: Little, Brown and Company.

This three day symposium on the thymus was held in Melbourne, Australia, in honor of Sir Macfarlane Burnet at the time of his retirement as Director of the Walter and Eliza Hall Institute of Medical Research. His contributions first in virology and subsequently in immunology are well known to investigators in these fields. Burnet served as conference chairman and 26 investigators participated in the conference.

The volume is arranged in six major cotegories. There is a comprehensive discussion of the results of investigations utilizing electron microscopy, immunochemistry, cytogenetics, histochemistry, tissue culture and other techniques in relation to the various physiologic roles of the thymus in lymphopoiesis and in the development of cellular and humoral immunologic capacities. The papers are supplemented by discussions in depth which make up almost one-third of the text and in which participants in the symposium call attention to many as yet unsolved problems or controversial issues such as the elaboration of humoral factors by the thymus. In the first paper dealing with the cytological evidence for secretory functions of the thymus by Doctor Sam L. Clark, Jr., elegant electron microscopic techniques are presented with strong evidence that the thymus produces a hormone capable of stimulating lymphopoiesis. This is followed by sections on the function of the lymphocyte and the role of the thymus in cellular and humoral immunity. Another group of presentations deals in an up-to-date fashion with human diseases now acknowledged as caused by thymic lesions or associated therewith, including genetic dysplasias of the organ, genetic or acquired immunologic deficiencies, thymoma associated with myasthenia gravis or with pure red cell anemia, thymic changes in systemic lupus erythematosis, and in some autoimmune diseases. Throughout the presentations, the importance of the developmental biology not only in normal states but in relation to various disease processes is emphasized. Evidence is provided for and against selective mechanisms of antibody formation and for the concept of an association between cellular and humoral immune mechanisms. No less challenging are the questions raised in connection with clinical aspects such as the pathogenesis of abnormal immune responses encountered in immuno-proliferative diseases.

For the investigator or physician interested in the rapidly developing field of immunobiology, this book is a superb contribution. — *Harris D. Riley, Jr., M.D.* □

Miscellaneous Advertisements

FOR SUBLEASE part or all, 4,000 square feet, well planned office space on well traveled street. One block from shopping area. Good pay neighborhood. Three doctors and one dentist in well established practice there for past ten years. Contact Paul D. Erwin, M.D., 2209 North Portland, Oklahoma City. WI 6-4444.

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LOCUM TENENS wanted. Available July and August, 1967. Have served rotating internship and completed one-year residency in obstetrics and gynecology in June. Contact Gary F. Strebel, M.D., 835 Madison, Oklahoma City. Phone GA 7-1353. □

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The fast-disintegrating uncoated tablet gives relief in 15 minutes

Each tablet contains:

Potassium Iodide	195 mg.
Aminophylline	130 mg.
Phenobarbital, Caution: May be habit forming...	21 mg.
Ephedrine HCl	16 mg.

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Precautions: Usual for aminophylline-ephedrine-phenobarbital. Iodides may cause nausea, long use may cause goiter. Discontinue if symptoms of iodism develop.

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One tablet, with full glass of water, 3 or 4 times daily.

Dispensed in bottles of 100 and 1000 tablets.

MUDRANE GG—Formula, dosage and package identical to Mudrane—*except*—100 mg. glyceryl guaiacolate replaces the potassium iodide. The value of Mudrane cannot be enjoyed by a small group in which K.I. is contraindicated. Mudrane GG is prepared for this group.

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*Based on Statistical Report, U.S. Dept. Commerce, ed. 86, and Fisher, G. F., and Vavra, H. M.: Pub. Health Rep. 80:961 (Nov.) 1965.

Note: DEXTROSTIX is not meant to replace the more precise analytical laboratory procedures such as needed in glucose tolerance testing.

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Night Leg Cramps . . . Unwelcome Bedfellow

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Prescribing Information: Composition: Each white, beveled, compressed tablet contains: Quinine Sulfate 260 mg. and Aminophylline 195 mg. **Contraindication:** QUINAMM is contraindicated in pregnancy because of its quinine content. **Precautions:** Aminophylline may produce intestinal cramps in some instances, and quinine may produce symptoms of cinchonism, such as tinnitus, dizziness, and gastrointestinal disturbance. Discontinue use if ringing in the ears, deafness, skin rash, or visual disturbances occur. **Dosage:** One tablet upon retiring. Where necessary, dosage may be increased to one tablet following the evening meal and one tablet upon retiring. **Supplied:** Bottles of 100 and 500 tablets.

References: 1. Shumon, C.: Am. J. Med. Sci., 225:54, 1953. 2. Perchuk, E., et al.: Angiology, 12:102, 1961. 3. Rowls, W., et al.: Med. Times, 87:818, 1959.

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in alcoholism:

B and C vitamins aid therapy. Therapeutic amounts of B and C vitamins can be important in the management of the alcoholic patient. In alcoholism, as in many chronic illnesses, STRESSCAPS vitamins aid therapy.



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Each capsule contains:	
Vitamin B_1 (as Thiamine Mononitrate)	10 mg
Vitamin B_2 (Riboflavin)	10 mg
Vitamin B_6 (Pyridoxine HCl)	2 mg
Vitamin B_{12} Crystalline	4 mcgm
Vitamin C (Ascorbic Acid)	300 mg
Niacinamide	100 mg
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Recommended intake: Adults, 1 capsule daily, for the treatment of vitamin deficiencies. Supplied in decorative "reminder" jars of 30 and 100; bottles of 500.

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Active Ingredients:
Phenylephrine Hcl 0.25%
Phenylpropanolamine Hcl .. 0.50%
Chlorobutanol 0.15%
Tripelennamine Hcl 0.50%
In Isotonic Solution

Vasomist

(PLAIN)

VASOCONSTRICTOR AND NASAL DECONGESTANT

Active Ingredients:
Phenylephrine Hcl **0.25%**
Phenylpropanolamine Hcl ... **0.50%**
Chlorobutanol **0.15%**
In Isotonic Solution

USE: Temporary relief of nasal congestion due to colds and hay fever.
DIRECTIONS: Adults and Children: Instill two or three drops into each nostril, using no more than needed to provide relief. Repeat every three to four hours as needed but not oftener.

AVAILABILITY
In plastic squeeze bottles containing ¾ fluid oz. and in dropper bottles containing 1 fluid oz.

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USE 'POLYSPORIN'® brand POLYMYXIN B-BACITRACIN OINTMENT

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Caution: As with other antibiotic products, prolonged use may result in overgrowth of nonsusceptible organisms, including fungi. Appropriate measures should be taken if this occurs.

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Complete literature available on request from Professional Services Dept. PML.



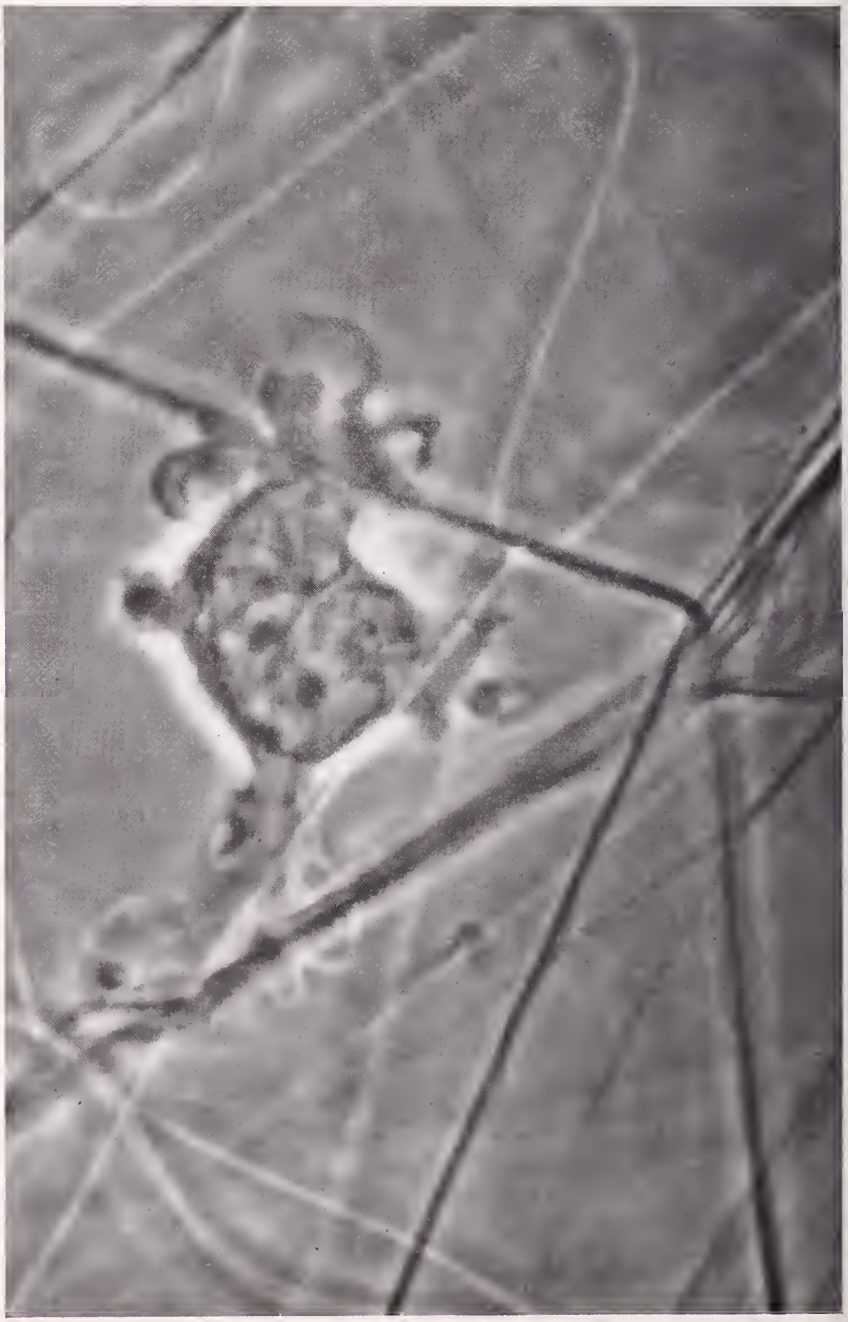
BURROUGHS WELLCOME & CO. (U.S.A.) INC.
Tuckahoe, N.Y.

INFLAMMATION:
A cellular fight for life

A SYNTEX REPORT based on recently developed hypotheses about topical corticosteroids, including the cellular theories of inflammation by Thomas F. Dougherty, Ph.D., University of Utah.

You are looking at a fibroblast fighting for life. This cell—one of the most common found in connective tissue—has literally been poisoned by cytotoxins released from other cells that have ruptured. Soon, if the abnormal activity of this fibroblast does not cease, it, too, will rupture and die—one more casualty in the inflammatory wave of destruction precipitated by injury.

Until a short time ago no one had ever witnessed such a scene at the cellular level. Now, through advanced cinemicrographic techniques, it is possible to view and photograph the inflammatory process as produced experimentally in living animal tissue. This method permits new insight into the mechanism of inflammation and the role of corticosteroids in therapeutic management. Equally important, these techniques shed new light on factors that may make one corticosteroid more effective than another—factors that can be correlated with other chemical, biologic, and clinical parameters.

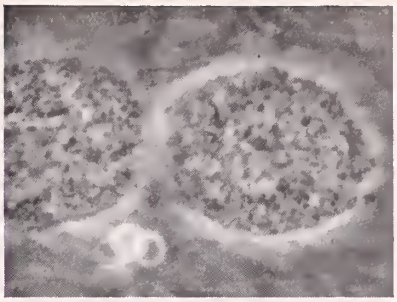


Visual evidence of how corticosteroids influence the inflammatory reaction

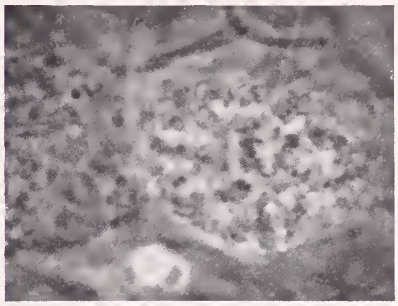
Working with phase-contrast cinemicrography on living animal tissue, Doctors Thomas F. Dougherty and David Berliner of the University of Utah College of Medicine have actually filmed cellular events that occur during the inflammatory reaction. This remarkable study* and additional work by these investigators, as well as by others, have established a new theoretical biologic basis for the antiinflammatory effect of the corticosteroids. (It must be noted that other theories, such as the lysosome or so-called "suicide bag" theory, have been postulated, although it is quite likely that there are more similarities than differences among the various theoretical models.)

The inflammatory wave of destruction

In this investigation an injurious injection of gelatin is used to set off an inflammatory reaction in living mouse tissue. What follows is a wave of destructive cellular activity that comprises the inflammatory response to injury. Mast cells (which contain heparin, serotonin and histamine) take up water, swell and rupture, releasing their contents, which are toxic outside the mast cell wall. These toxins, in turn, cause disintegration of other cells (such as fibroblasts) and the release of additional toxic material. Capillaries, too, take up water and leak unformed blood elements, causing edema. And polymorphonuclears, lymphocytes and perithelial cells invade the inflamed site. As a result of all these changes, the cellular environment reaches a state of turmoil.



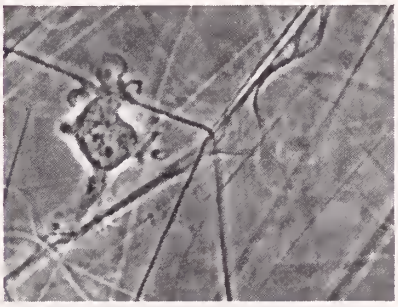
Phase-contrast microscopy showing mast cell before injury.



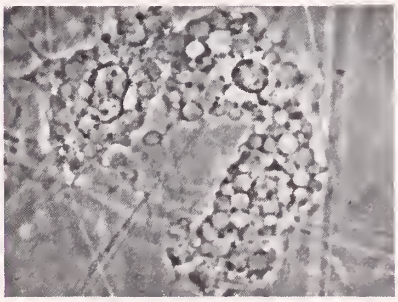
Mast cell (after injury) has broken up and released cytotoxins.

How corticosteroids change the picture

Corticosteroids appear to virtually stop the abnormal cellular activity that constitutes the inflammatory reaction. This permits the body's natural resources to clear up the inflamed area and repair the damaged tissue. This interpretation is supported by the fact that when the injurious gelatin solution is injected simultaneously with a corticosteroid —Synalar (fluocinolone acetonide)— the inflammatory pattern simply does not develop.



Fibroblast in high state of activity, much distorted.



Mast cells showing effects of corticosteroid action: cells are normal in size, shape and activity.



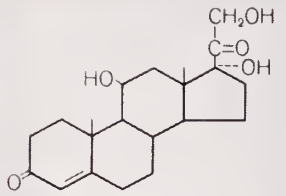
In summarizing his study Doctor Dougherty states: "...we also feel this work may explain why one corticosteroid helps a patient more rapidly and effectively than another. If it does, it is because one corticosteroid is the fastest, most effective inhibitor of the series of inflammatory events at the tissue level."

A New View of Corticosteroid Action in Inflammatory Dermatoses, a film based on this study, is now available from your Syntex representative.

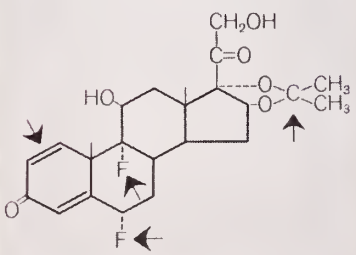
See last page for contraindications, precautions, side effects and dosage.

How advances in chemical design have achieved greater steroid potency

The chemical modification of corticosteroid molecules from the advent of hydrocortisone to the development of Synalar (fluocinolone acetonide) is a prime example of how biochemists can "design" to increase therapeutic activity and minimize undesirable side actions. Below, for example, we see the important changes that were made in reference to the hydrocortisone molecule to produce fluocinolone acetonide, one of the most active of all topical corticosteroids. As a result, a 0.01% preparation of Synalar (fluocinolone acetonide) has been reported to do the work of a 1% hydrocortisone product containing 100 times more cortiscosteroid. And it can often do it more effectively.



Hydrocortisone

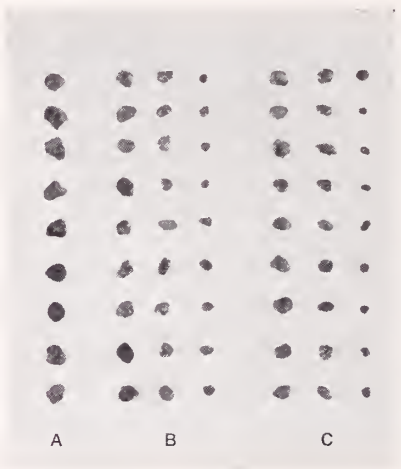


Fluocinolone Acetonide (Synalar)

- ☐ *a double bond between carbons 1 and 2*
- ☐ *fluorine substitutions at* both *the 6-α, and the 9-α positions*
- ☐ *the addition of the acetonide at the 16-α, 17-α positions, thus providing one of the most potent topical corticosteroids available.*

How bioassay tests are used to "predict" therapeutic potential

Biologic assays are another tool used by researchers to help establish the relative activity of corticosteroids. To date no single method of assaying corticosteroid activity has emerged as the ideal "yardstick" for predicting therapeutic potential. Taken together, however, these methods have proved useful. When such tests are run on various corticosteroids, a definite order of corticosteroid activity becomes evident. Compounds with the highest order of activity may be expected to merit clinical trial to establish their high therapeutic potential. When assayed by these methods, fluocinolone acetonide (Synalar) emerges as one of the most active topical corticosteroids, milligram for milligram, available for clinical application today.



THE THYMUS INVOLUTION ASSAY[1-4] is run on adrenalectomized rats. The sizes of the glands are measured, and the degree of involution caused by the steroid is determined as an indication of its potency. In the above photo, the comparative involution of thymus glands achieved with hydrocortisone and Synalar (fluocinolone acetonide) is shown. Untreated controls (A) show normal size. Group B – injected with 1, 2 and 4 mg. of hydrocortisone – show progressively smaller thymuses as does Group C – injected with fluocinolone acetonide – but with only 1/500th the dose of hydrocortisone.



THE ANTIGRANULOMA ASSAY[1-4] also utilizes adrenalectomized rats. Granulomas are induced by subcutaneous implantation of cotton pellets on either side of the thorax. The degree of granuloma inhibition achieved by a steroid reflects its potency. The above photo shows the inhibition of granuloma formation achieved with hydrocortisone and Synalar (fluocinolone acetonide). Untreated controls (A) show large, red granulomas adhering to the pellets. Group B, receiving hydrocortisone and Group C, receiving fluocinolone acetonide, show little, if any, granuloma formation. Fluocinolone acetonide produced the same effect as hydrocortisone with only 1/500th the dose. This assay, as well as the thymus involution assay, measures systemic rather than topical corticosteroid activity. Nevertheless, results by these methods correlate well with other assays and with the milligram potencies of topical steroids in current clinical use.

Worldwide clinical experience confirms the predictable therapeutic potential of Synalar

It is particularly gratifying that the promise of the advanced chemical design and high order of bioassay activity of Synalar (fluocinolone acetonide) has been confirmed by widespread therapeutic application. Indeed, the impressive clinical response rate of Synalar has been documented in no fewer than 232 papers from 22 countries.

Representative Clinical Results with Synalar*

Efficacy Documented in over 4,000 Patients

Condition	Number of Publications	Number of Patients	Significant Improvement†
Contact Dermatitis	27	750	713
Eczematous Dermatitis	21	472	409
Seborrheic Dermatitis	18	442	426
Atopic Dermatitis	24	460	426
Psoriasis	36	1,699	1,510
Neurodermatitis	18	351	324
Total	144	4,174	3,808

*Complete bibliography on request.

†Expressed by the authors as excellent, very good, good, complete remission of inflammation, etc.

PRESCRIBING INFORMATION

For initiation of therapy: Cream 0.025%, 5 and 15 Gm. tubes, 425 Gm. jars; *for emollient effect:* Ointment 0.025%, 15 Gm. tubes; *for maintenance therapy:* Cream 0.01%, 15 and 45 Gm. tubes, 120 Gm. jars; *for intertriginous or hairy sites:* Solution 0.01%, 20 cc. and 60 cc. plastic squeeze bottles; *for infected inflammatory dermatoses:* Neo-Synalar® Cream (0.025% fluocinolone acetonide, neomycin sulfate, equivalent to 0.35% neomycin base), 5 and 15 Gm. tubes.

CONTRAINDICATIONS: Tuberculous, fungal, and most viral lesions of the skin, (including herpes simplex, vaccinia, and varicella). Not for ophthalmic use. Contraindicated in individuals with a history of hypersensitivity to any of the components. PRECAUTIONS: Synalar preparations are virtually nonsensitizing and nonirritating. However, the solution may produce burning or stinging when applied to denuded or fissured areas. In some patients with dry lesions, the solution may increase dryness, scaling or itching. While topical steroids have not been reported to have an adverse effect on pregnancy, the safety of their use on pregnant females has not absolutely been established. Therefore, they should not be used extensively on pregnant patients, in large amounts, or for prolonged periods of time. Prolonged use of any antibiotic may result in overgrowth of nonsusceptible organisms; if this occurs, appropriate therapy should be instituted. When severe local infection or systemic infection exists, the use of systemic antibiotics should be considered, based on susceptibility testing. SIDE EFFECTS: Side effects are not ordinarily encountered with topically applied corticosteroids. As with all drugs, however, a few patients may react unfavorably to Synalar under certain conditions. The neomycin in Neo-Synalar Cream rarely produces allergic reactions.

REFERENCES: 1. Lerner, L. J., Bianchi, A., Turkheimer, A. R., Singer, F. M., and Borman, A.: Anti-inflammatory steroids: potency, duration and modification of activities. Ann NY Acad Sci 116:1071 (Aug. 27) 1964. 2. Idem: Comparison of anti-granuloma, thymolytic and glucocorticoid activities of anti-inflammatory steroids. Proc Soc Exp Biol Med 116:385 (June) 1964. 3. Ringler, A.: Activities of adrenocorticosteroids in experimental animals and man, in Dorfman, R. I.: Methods of hormone research, New York, Academic Press, 1964. vol. III. pp. 234-280. 4. Gubersky, V. R.: To be published.

fluocinolona acetonide — an original steroid from

SYNTEX LABORATORIES INC., PALO ALTO, CALIF.

For inflammatory dermatoses... by any measure a topical corticosteroid of choice

Synalar® (fluocinolone acetonide)

Milligram for milligram one of the most active topical corticosteroids available

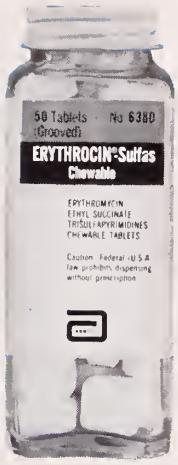
Rapid and predictable in antiinflammatory and antipruritic activity

Results often comparable to those of systemic corticosteroids with fewer hazards



Perhaps there have been times when you wanted to prescribe erythromycin and triple sulfas for little patients. Now you can—with a choice of two new fine-tasting pediatric forms.

New–Two Pediatric Forms of Erythromycin and Triple Sulfas





ERYTHROCIN®-SULFAS Chewable (Erythromycin ethyl succinate-trisulfapyrimidines chewable tablet)

In clinical trials[1,2], this orange-flavored tablet was given to 55 patients, aged four months to 18 years.

Diagnoses (multiple in some cases) represented a cross section of bacterial infections commonly seen in pediatric office practice.

Therapy was given from three to 12 days, with an average of six days.

Of the 55 patients, 30 were reported cured within 72 hours, while 22 showed partial recovery within the same time, and subsequent clinical cure.

A clinical cure rate of 94.5%

ERYTHROCIN®-SULFAS Granules (Erythromycin ethyl succinate-trisulfapyrimidines granules for oral suspension)

87 patients were treated[1,2]—all children, ages four months to 15 years.

The diagnoses were multiple in some cases and were chiefly bacterial infections of the respiratory tract.

Dosage was maintained from three to 10 days; average treatment was five days. All of the ill children accepted the orange-flavored suspension favorably.

53 were clinically cured within 72 hours, while 32 showed partial relief within the same time, and subsequent clinical cure.

701358

A clinical cure rate of 97.7%

1. Case Reports on File, Dept. Clin. Development, Abbott Laboratories.
2. Polley, R.F.L., Use of Erythromycin-Sulfas in Office Practice, Western Med., 7:177, July, 1966.

ABBOTT

Brief Summary on next page

ERYTHROCIN®-SULFAS
Brief Summary

Contraindications: Known sensitivity to erythromycin or sulfonamides. Because of the possibility of kernicterus with sulfonamides, do not use in pregnancy at term, premature or newborn infants.

Warnings: As with other forms of sulfonamide therapy, carefully evaluate patients with liver or kidney damage, urinary obstruction, or blood dyscrasia. Deaths have been reported from hypersensitivity reactions and blood dyscrasias following use of sulfonamides. Perform blood counts and liver and kidney function tests if used repeatedly at close intervals or for long periods.

Precautions, Side Effects: Occasionally mild abdominal discomfort, nausea or vomiting may occur with erythromycin, generally controlled by reduction of dosage. Mild allergic reactions (such as urticaria and other skin rashes) may occur. Serious allergic reactions have been extremely infrequent. Use sulfonamides with caution in patients with a history of allergy. Assure adequate fluid intake to prevent crystalluria and institute alkali therapy if indicated. If overgrowth of nonsusceptible organisms occurs, withdraw the drug and institute appropriate treatment. If a patient should show signs of hypersensitivity, appropriate countermeasures (e.g. epinephrine, steriods, etc.) should be administered and the drug withdrawn.

Adverse Reactions: Sulfonamide therapy may be associated with headache, nausea, vomiting, urticaria, diarrhea, hepatitis, pancreatitis, blood dyscrasias, neuropathy, drug fever, skin rash, injection of the conjunctiva and sclera, petechiae, purpura, hematuria and crystalluria.

Side effects due to erythromycin are infrequent, but occasional abdominal discomfort, nausea, or vomiting, urticaria and other skin rashes may occur.

Supplied: The Granules for Oral Suspension come in bottles of 60 ml. and 150 ml. The Chewable tablets are in bottles of 50. Each 5-ml. teaspoonful of reconstituted Granules or each Chewable tablet provides erythromycin ethyl succinate equivalent to 125 mg. of erythromycin activity and 167 mg. of each of sulfadiazine, sulfamerazine and sulfamethazine.

701358

ABBOTT

Tandearil®
oxyphenbutazone

Tandearil in Painful Shoulder

Therapeutic Effects: Stiffness and pain may diminish within 2 days, and full mobility may be restored within a week. These effects are obtained with oxyphenbutazone alone or combined with physiotherapy or local hormonal injections. The drug is usually well tolerated and does not affect pituitary-adrenal function or immune response.

Contraindications: Edema; danger of cardiac decompensation; history or symptoms of peptic ulcer; renal, hepatic or cardiac damage; history of drug allergy; history of blood dyscrasia. The drug should not be given when the patient is senile or when other potent drugs are given concurrently.

Warning: If coumarin-type anticoagulants are given simultaneously, watch for excessive increase in prothrombin time. Pyrazole compounds may potentiate the pharmacologic action of sulfonylurea, sulfonamide-type agents and insulin. Carefully observe patients receiving such therapy. Use with great caution in the first trimester of pregnancy.

Precautions: Obtain a detailed history and a complete physical and laboratory examination, including a blood count. The patient should be closely supervised and should be warned to report immediately fever, sore throat, or mouth lesions (symptoms of blood dyscrasia); sudden weight gain (water retention); skin reactions; black or tarry stools or other evidence of intestinal hemorrhage. Make regular blood counts. Discontinue the drug and institute countermeasures if the white count changes significantly, granulocytes decrease, or immature forms appear. Use greater care in the elderly and in hypertensives.

Adverse Reactions: The most common are nausea, edema and drug rash. The drug has been associated with peptic ulcer and may reactivate a latent peptic ulcer. Infrequently, agranulocytosis, or a generalized allergic reaction may occur and require withdrawal of medication. Stomatitis, salivary gland enlargement, vomiting, vertigo and languor may occur. Leukemia and leukemoid reactions have been reported but cannot definitely be attributed to the drug. Thrombocytopenic purpura and aplastic anemia may occur. Confusional states, agitation, headache, blurred vision, optic neuritis and transient hearing loss have been reported, as have hyperglycemia, hepatitis, jaundice, and several cases of anuria and hematuria. With long-term use, reversible thyroid hyperplasia may occur infrequently. Moderate lowering of the red cell count due to hemodilution may occur.

Dosage in Painful Shoulder: 600 mg. daily in divided doses for 2 to 3 days; 300 mg. daily thereafter. Usual duration of therapy: 2 to 7 days.

Availability: Tablets of 100 mg. 6562-VI(B)R

For complete details, please refer to full prescribing information.

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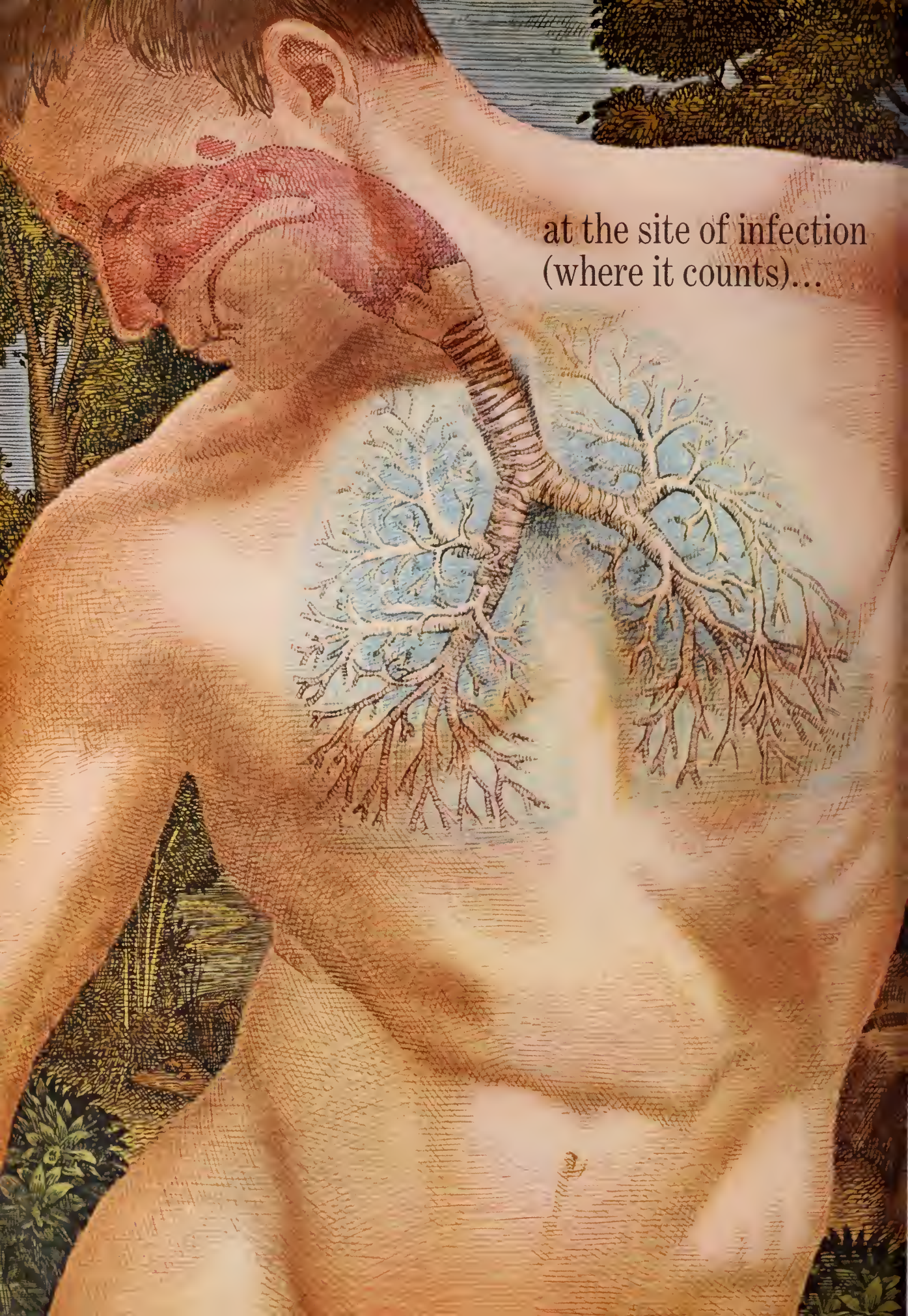
84.2% of 127 patients

81% of 48 patients

Please see adjoining page for brief prescribing summary.

TA-5094PC

Sperling, I. L. Applied Therap. 6:117, 1964
Rosenbaum, E. E., and Schwarz, G. R. Northwest Med. 61:927, 1962


at the site of infection
(where it counts)...

Ilosone® provides more antibacterial activity than any other oral erythromycin

Acid stable, better absorbed... Ilosone produces faster, higher, more prolonged blood levels, even in the presence of food[1-3]

Because it is the most active form of oral erythromycin, Ilosone can help assure consistently greater antibacterial activity at the site of infection. Ilosone produces peak antibacterial blood levels two to four times those of other erythromycin preparations.[1,2] Not only are these levels attained earlier, but they are maintained for much longer periods. Even the presence of food does not seem to affect the activity of Ilosone.[1,3]

In the treatment of patients with bacterial infections susceptible to erythromycin, Ilosone has compiled an excellent therapeutic record. Since it exerts its greatest activity against gram-positive organisms, it is particularly useful in common respiratory and soft-tissue bacterial infections. Ilosone kills—not merely inhibits—streptococci, pneumococci, and more strains of staphylococci than any other macrolide antibiotic. This bactericidal action, coupled with the high antibacterial levels attained, makes Ilosone especially valuable in patients with low host resistance, such as infants, debilitated individuals, and diabetics.

Ilosone has shown no cross-resistance with penicillin and may be effective against organisms that have become resistant to that agent. Despite its high antibacterial activity, Ilosone has demonstrated a low incidence of side reactions. Blood dyscrasias, ototoxicity, and tooth staining have not been observed. Infrequent cases of drug idiosyncrasy, manifested by a cholestatic jaundice, have occurred, but there have been no known definite residual effects.

Now available:
New! Ready-mixed Ilosone Liquid 125! (Contains erythromycin estolate equivalent to 125 mg. erythromycin base per 5-cc. teaspoonful.)

700970

Ilosone®
Erythromycin Estolate

Lilly

(See next page for prescribing information.)

Ilosone®/ the most active oral form of erythromycin

Description: Ilosone is the most active form of oral erythromycin that has been developed. Because it is stable in acid, well absorbed, and excreted in lesser amounts in the bile, it provides faster, higher, and longer-lasting levels of antibacterial activity (ABA) in the serum, even when taken with food, than do comparable doses of erythromycin.

Indications: Ilosone is indicated in infections caused by microorganisms sensitive to its action (especially staphylococci, hemolytic streptococci, and pneumococci). The drug is therefore useful in a high proportion of bacterial diseases encountered in clinical practice and particularly in the treatment of bacterial infections of the upper and lower respiratory tract and soft tissues.

In the treatment of acute bacterial pharyngitis and tonsillitis, this antibiotic has promptly eradicated the bacteria (streptococci) and has produced a parallel prompt clinical improvement. There have been no group A beta-hemolytic streptococci resistant to this preparation. In beta-hemolytic streptococcus infections, treatment should be maintained for ten days to prevent the development of rheumatic fever or glomerulonephritis.

Erythromycin estolate has proved to be very effective in pneumococcus pneumonia and in acute bronchitis with pneumococci on culture. Bronchopneumonia and otitis media in children have responded well to its use.

The antibiotic has been used very successfully in staphylococcus infections. Good therapeutic results have been obtained in soft-tissue infections, abscesses, cellulitis, carbuncles, wound infections, and furunculosis.

In serious staphylococcus infections, erythromycin preparations should be used only in combination therapy with other antimicrobial agents. As is the case with any treatment regimen used in these severe conditions, surgical procedures should be performed when indicated, and large dosages of the antimicrobial agents should be employed. In this fashion, Ilosone has been effective in staphylococcus pneumonia, osteomyelitis, septicemia, empyema, and meningitis.

Multiple 500-mg. doses of the drug have also been useful in gonorrhea and syphilis. Since penicillin is the drug of choice for the treatment of syphilis and gonorrhea, erythromycin estolate should be employed for these infections only in patients with a history of penicillin allergy. Also, other infections due to susceptible bacteria in patients known to be hypersensitive to penicillin or other antibiotics may be considered for treatment with Ilosone.

Contraindications: Ilosone is contraindicated in patients with a known history of sensitivity to this drug and in those with preexisting liver disease or dysfunction.

Adverse Reactions: Data obtained from seven years' use of propionyl erythromycin ester and erythromycin estolate (Ilosone) indicate that hepatic dysfunction with or without clinical jaundice may occur during or following courses of therapy with the drug.

Changes in liver function tests in such cases have been indicative of intrahepatic cholestasis. The symptoms appear to be the result of a form of sensitization. The initial symptoms have developed in some cases after a few days of treatment but generally have followed one or two weeks of continuous therapy or several courses of the drug. Symptoms reappear promptly, usually within forty-eight hours, if the drug is readministered to sensitive patients. Eosinophilia was noted in peripheral blood counts. The findings readily subsided without apparent residual effects when treatment was discontinued. Recovery was delayed in one reported instance. The physician indicated in this case that either drug-induced jaundice or viral hepatitis may have been responsible for the findings.

In one clinical study involving ninety-three patients treated with the antibiotic, three cases of jaundice were observed and an additional eleven cases developed some changes in liver function tests. Three of the patients had abnormal liver function tests a second time on readministration of the drug.

Even though it is assumed that not all cases of jaundice have been reported, it seems clear that the number is small compared with the amount of drug that has been used. Reported cases have included persons in whom there had been administered other drugs known to be associated at times with hepatic side-effects and cases in which the presence of viral hepatitis or other disease may have been responsible for the findings. In some of the cases, associated gastro-intestinal symptoms simulated the colic of biliary tract disease. In other instances, clinical symptoms and results of liver function tests resembled findings in extrahepatic obstructive jaundice. It appears that the occurrence of jaundice after administration of Ilosone is infrequent, but further investigations are being made to estimate its incidence more accurately.

In those cases mentioned above in which jaundice appeared t be definitely related to use of the drug, laboratory findings wer characterized by increased direct-reacting bilirubin, elevate alkaline phosphatase levels, negative or weakly positive cephali flocculation and thymol turbidity tests, elevated serum glutami oxalacetic transaminase levels, peripheral eosinophilia, and no mal cholecystograms.

Individual idiosyncrasy seems evident since jaundice has n been reported in other patients taking prolonged courses of th medication. Patients with chronic infection have been given 1 t to 2 Gm. of the drug daily for periods of two to six months, an patients with rheumatic fever have taken prophylactic doses c 0.5 Gm. daily for two years without difficulty. In one group c 144 patients who received the drug daily for two years, no jau dice was noted. It was of interest that members of six of the patients' families, who were not taking the drug, had episod of jaundice during the study period.

Transaminase and serum alkaline phosphatase levels we determined in a group of fifty-four adults and children who too 250 mg. of Ilosone daily for an average of sixteen months a rheumatic fever prophylaxis. The results were compared wit those of a similar group of forty-four patients who received pe icillin. There were no cases of jaundice in either group. Elevatio of SGPT and serum alkaline phosphatase levels during the cours of treatment was observed in one patient treated with Ilosor and in two patients treated with penicillin. Seven other patien in the group receiving Ilosone and four others in the penicilli group showed elevations in one of the tests at some time durin administration of the drugs.

Very satisfactory therapeutic results, without toxicity, we reported in 102 pediatric patients who received short-term (te day) courses of Ilosone in the treatment of streptococcus infe tions. Results of liver function tests in these patients wer comparable to those in a similar control group who had receive penicillin.

Gastro-intestinal disturbances not associated with hepatic e fects are observed in a small proportion of individuals as a resu of a local stimulating effect of the medication on the alimentar tract; however, the normal intestinal gram-negative bacteri flora is not appreciably altered by erythromycin drugs.

Although allergic manifestations are uncommon with the u of erythromycin, there have been occasional reports of urticari skin eruptions, and, on rare occasions, anaphylaxis.

Administration and Dosage: Ilosone is administered orally.

Ilosone Pulvules®, Ilosone Liquid 125, Ilosone, 125, for Or Suspension, Ilosone Drops, Ilosone Chewable Tablets.

For infants and for children under twenty-five pounds of bod weight, the usual dosage is 5 mg. per pound every six hours; fo children twenty-five to fifty pounds, 125 mg. every six hour (Tablets Ilosone Chewable should be chewed or crushed an swallowed with water.)

For adults and for children over fifty pounds, the usual dosag of Ilosone is 250 mg. every six hours.

For severe infections, these dosages may be doubled.

When larger doses are indicated, parenteral erythromyci therapy should be considered.

In the treatment of syphilis, the recommended total dosage 20 to 30 Gm. given in divided doses for a period of ten to fiftee days. Close follow-up of the patient is necessary since erythr mycin drugs have not had adequate evaluation in all stages c syphilis. Examinations of spinal fluid are recommended as pa of the follow-up therapy.

For gonorrhea, 500 mg. four times a day for four days a recommended. In the treatment of gonorrhea, patients with suspected lesion of syphilis should have a dark-field examinatio before receiving antibiotics, and monthly serologic tests shoul be made for a period of three months.

How Supplied: Pulvules Ilosone, Capsules, N.F., 125 and 250 m (equivalent to base), in bottles of 24 and 100.

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Ilosone, 125, for Oral Suspension, N.F., 125 mg. (equivale to base) per 5-cc. teaspoonful, in 60 and 150-cc.-size package

Ilosone Drops, 5 mg. (equivalent to base) per drop, in 10-cc.-siz packages, with dropper calibrated at 25 and 50 mg.

Tablets Ilosone Chewable, N.F., 125 mg. (equivalent to base in bottles of 50. [03276

References: 1. Griffith, R. S., and Black, H. R.: Am. J. M. Sc., *247*:69, 196
2. Griffith, R. S., and Black, H. R.: Antibiotics & Chemother., *12*:398, 196
3. Hirsch, H. A., Pryles, C. V., and Finland, M.: Am. J. M. Sc., *239*:198, 1960.

Additional information available to physicians upon request.
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6 DATE OF ONSET | 7 DATE FIRST CONSULTED | 8. DUE TO PREGNANCY ☐ YES ☐

11. SURGICAL OR OBSTETRICAL PROCEDURES (DESCRIBE)

12. IF HOSPITALIZED, NAME AND ADDRESS OF

15 NAME AND ADDRESS OF OTHER P

COMPLETE IF PATIEN

16 TOTAL DISAP

FROM

17. P

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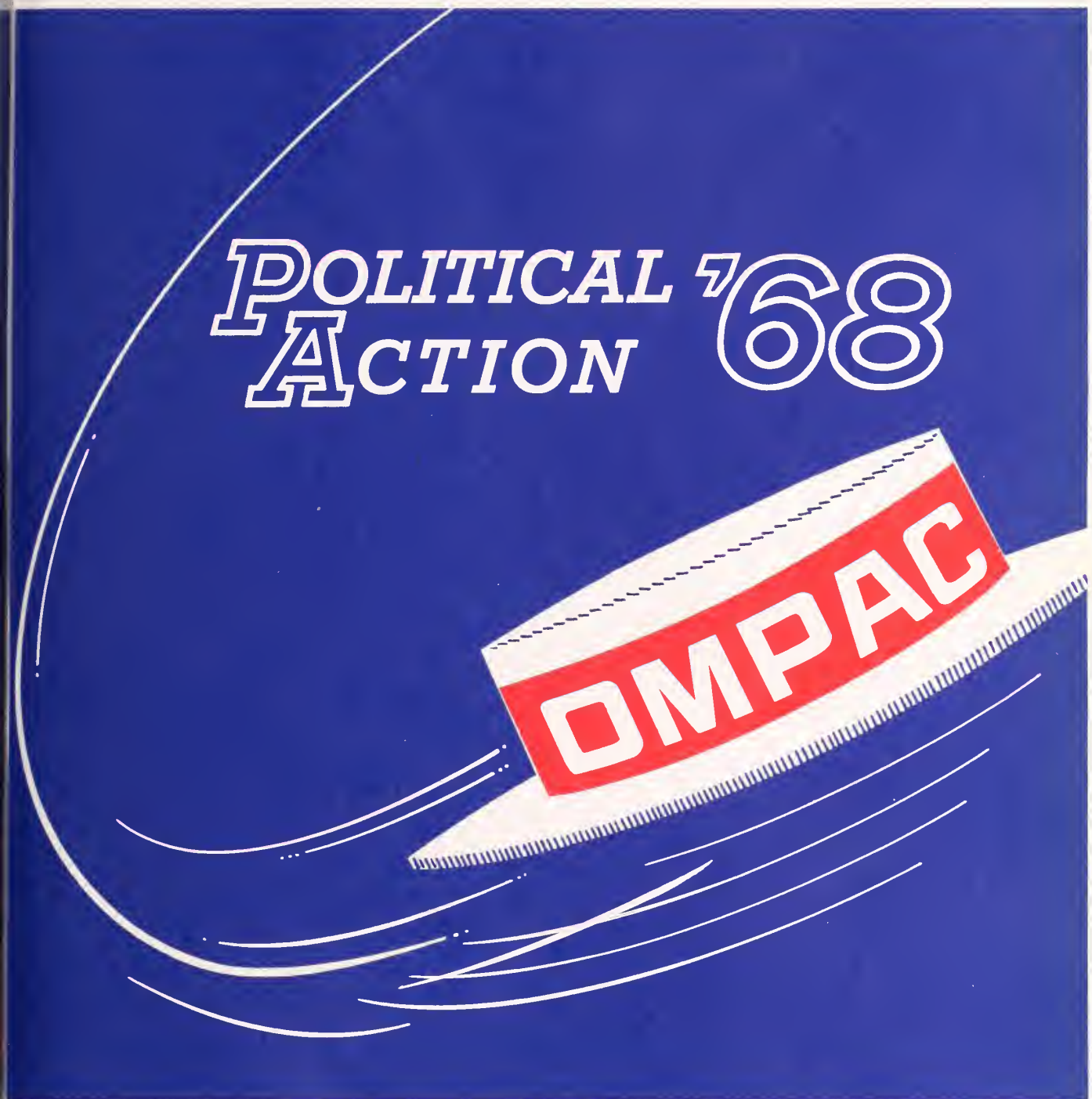
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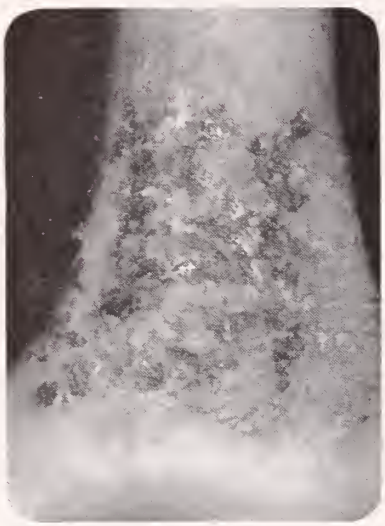
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PHOTOGRAPHS COURTESY OF M. M. NIERMAN, M.D.

Aristocort® Topical Ointment 0.1% and Cream 0.1%, 0.5%
Triamcinolone Acetonide
Also available in foam form.

Lederle LEDERLE LABORATORIES, A Division of American Cyanamid Company, Pearl River, New York

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The JOURNAL of the Oklahoma State Medical Association

SEPTEMBER 1967
Vol. 60, No. 9

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"When I couldn't even smell corned beef and cabbage,
I decided it was time for you, Doc."

Maybe he doesn't know when he's well off. But you might want to prescribe long-acting Novahistine LP anyway.

Two tablets in the morning and two in the evening will usually provide day and night relief by helping to clear congested air passages for normal, free breathing. Novahistine LP is formulated to provide continuous therapeutic effect for 8 to 12 hours. The decongestant ingredients help restore normal mucus secretion and ciliary activity—physiologic defenses against infection of the respiratory tract.

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The AMBAR SCRAPBOOK of Obesity Oddities

FACT & LEGEND



GALLSTONES HAVE BEEN FOUND IN 60% OF PATIENTS WHO WEIGH MORE THAN 300 POUNDS, 45% HAVE DIABETES, AND 15-TO-20% HAVE HIGH BLOOD PRESSURE.

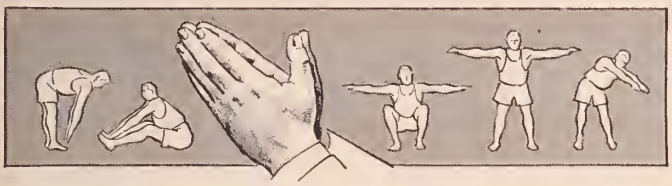
SOURCE: DUNCAN, G.G.: SCIENCE NEWS LETTER, 83:403 (JUNE 29) 1963.

NAPOLÉON BONAPARTE *LOST THE BATTLE OF WATERLOO BECAUSE HE WAS TOO FAT!*

ACCORDING TO THE NEW YORK TIMES OF APRIL 13, 1890, THE DEFEAT OCCURRED BECAUSE HE FAILED TO CHECK HIS INTELLIGENCE INFORMATION. "IT WAS A MATTER OF MERE INDOLENCE AND THIS INDOLENCE WAS CAUSED BY FAT."

SOURCE: JAMA 186:65 (OCT. 5) 1963.





THE BOOK *"PRAY YOUR WEIGHT AWAY"* URGES READERS TO "ASK GOD TO HELP YOU LIKE EXERCISE" FOR 15 MINUTES A DAY.

SOURCE: REV. C.W. SHEDD: NEW YORK, LIPPINCOTT, 1958.

DIET DROPOUTS ACCORDING TO DRS. SHIPMAN AND PLESSET "APPARENTLY NO DIETER SUCCEEDS WHO IS VERY ANXIOUS OR DEPRESSED."* THE AMBAR FORMULA PROVIDES **METHAMPHETAMINE** TO HELP **ELEVATE** THE **MOOD** AND **PHENOBARBITAL** TO HELP REDUCE **ANXIETY.**

*SOURCE: ARCHIVES OF GENERAL PSYCHIATRY 8:26 (JUNE 1963).

CONTROL FOOD AND MOOD ALL DAY LONG WITH A SINGLE MORNING DOSE

AMBAR #2 EXTENTABS®

methamphetamine HCl 15 mg., phenobarbital 64.8 mg. (1 gr.) (Warning: may be habit forming).

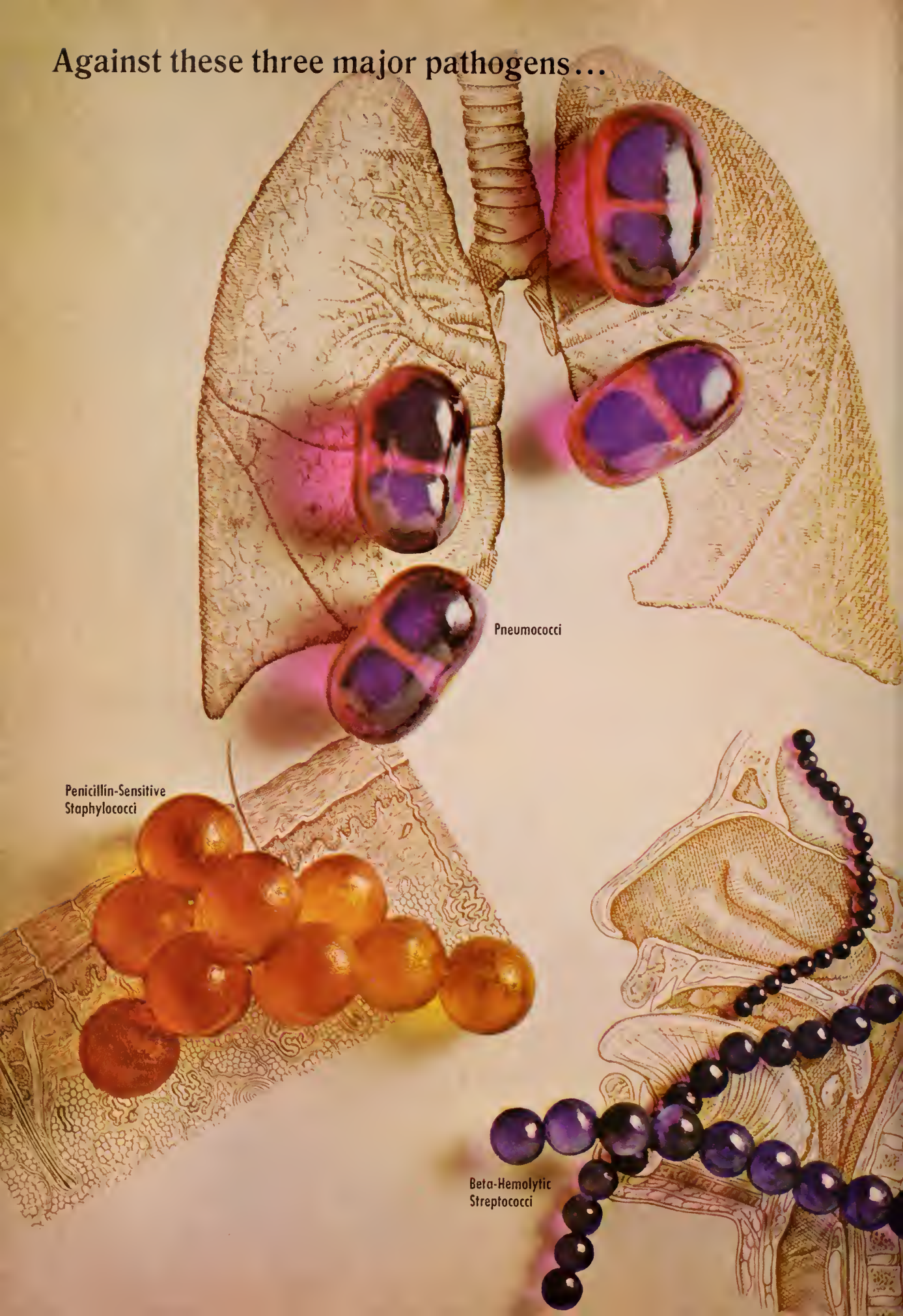
One Ambar Extentab before breakfast can help control most patients' appetite for up to 12 hours. Methamphetamine, the appetite suppressant, gently elevates mood and helps overcome dieting frustrations. Phenobarbital, the sedative in Ambar, controls irritability and anxiety...helps maintain a state of mental calm and equanimity. Both work together to ease the tensions that erode the willpower during periods of dieting.

Also available: Ambar #1 Extentabs®—methamphetamine hydrochloride 10 mg., phenobarbital 64.8 mg. (1 gr.) (Warning: may be habit forming).

BRIEF SUMMARY/**Indications:** Ambar suppresses appetite and helps offset emotional reactions to dieting. **Contraindications:** Hypersensitivity to barbiturates or sympathomimetics; patients with advanced renal or hepatic disease. **Precautions:** Administer with caution in the presence of cardiovascular disease or hypertension. **Side Effects:** Nervousness or excitement occasionally noted, but usually infrequent at recommended dosages. Slight drowsiness has been reported rarely. See package insert for further details.

A. H. ROBINS COMPANY, RICHMOND, VA. 23220 A·H·ROBINS

Against these three major pathogens…



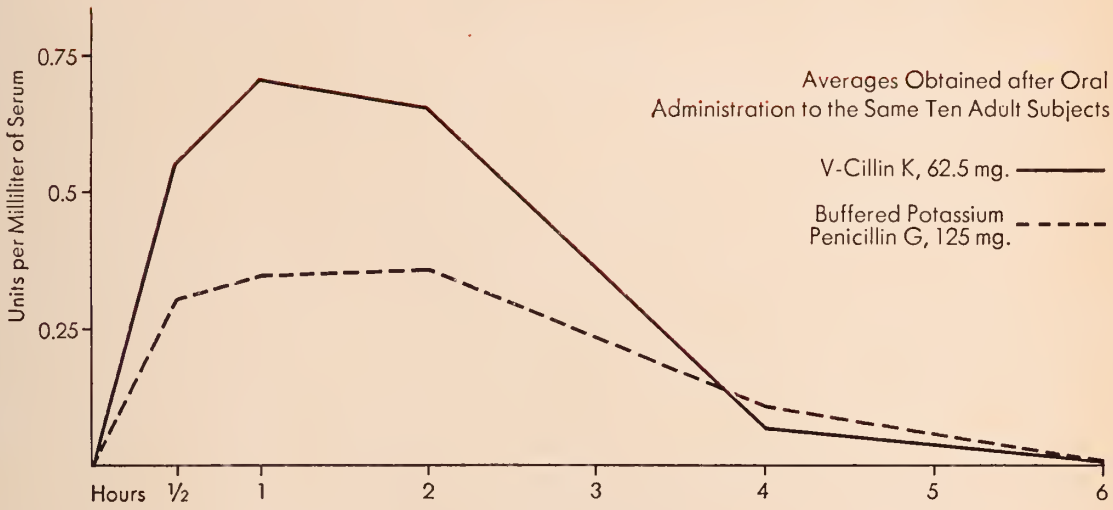
V-Cillin K® provides dependable oral antibacterial activity

because it combines a high degree of in-vitro activity...

Antibiotic	Staph. Aureus (Penicillin-Sensitive) MIC (mcg./ml.) Median	Range	Streptococcus, Group A MIC (mcg./ml.) Median	Range	Diplococcus Pneumoniae MIC (mcg./ml.) Median	Range
Penicillin V	0.02	0.02-0.04	0.02	0.003-0.4	0.01	0.005-0.2
Penicillin G	0.02	0.005-1.6	0.005	0.002-0.2	0.02	0.01-0.1
Methicillin	1.6	0.4-6.3	0.2	0.1-0.4	0.2	0.1-1.6
Oxacillin	0.4	0.1-3.1	0.04	0.02-0.4	0.1	0.04-0.8
Cloxacillin	0.2	0.2-0.8	0.1	0.1-0.8	—	—
Nafcillin	0.4	0.2-0.8	0.04	0.02-0.1	0.02	0.02-0.2
Ampicillin	0.2	0.1-0.8	0.02	0.01-0.04	0.02	0.01-0.04

Adapted from Klein, J. O., and Finland, M.: New England J. Med .269:1019, 1963.

with high blood levels, even in the presence of food



Adapted from Griffith, R. S., and Black, H. R.: Current Ther. Res., 6 253, 1964.

V-Cillin K® Lilly 700867

Potassium Phenoxymethyl Penicillin

(See next page for prescribing informatio

New 500 mg. tablets...a more convenient way to give high doses



Description: V-Cillin K is the potassium salt of V-Cillin® (phenoxymethyl penicillin, Lilly). This chemically improved form combines acid stability with immediate solubility and rapid absorption. Higher serum levels are obtained more rapidly with this penicillin than with equal oral doses of penicillin G. The higher serum levels and acid stability of V-Cillin K make it a more dependable penicillin for oral use.

V-Cillin K, Pediatric, is an oral solution of clinically proved V-Cillin K in teaspoon dosage form. When mixed as directed, each 5 cc. (approximately one teaspoonful) will contain 125 mg. (200,000 units) phenoxymethyl penicillin as the potassium salt.

Indications: V-Cillin K has been shown to be effective in the treatment of streptococcus, pneumococcus, and gonococcus infections as well as infections caused by sensitive strains of staphylococci. It may be used for the prophylaxis of streptococcus infections in patients with a history of rheumatic fever and for the prevention of bacterial endocarditis after tonsillectomy and tooth extraction in those patients with a history of rheumatic fever or congenital heart disease.

Contraindication: V-Cillin K should not be administered to a patient with a history of penicillin hypersensitivity.

Warnings: In rare instances, the use of penicillin may cause acute anaphylaxis which may prove fatal unless promptly controlled. This type of reaction appears more frequently in patients with a history of sensitivity reactions to penicillin and in those with bronchial asthma or other allergies. Resuscitative drugs should be readily available for emergency administration. These include epinephrine and pressor drugs (as well as oxygen for inhalation) for relief of immediate allergic manifestatians and antihistamines and corticosteroids for delayed effects.

Precautions: V-Cillin K should be used cautiously, if at all, in a patient with a strongly positive history of allergy.

In prolonged therapy with penicillin, and particularly with high parenteral dosage schedules, frequent evaluation of the renal and hematopoietic systems is recommended.

In suspected staphylococcus infections, proper laboratory studies (including sensitivity tests) should be performed.

The use of penicillin may be associated with the overgrowth of pencillin-insensitive organisms. In such cases, its administration should be discontinued, and appropriate measures should be taken.

Adverse Reactions: Although serious allergic reactions are much less common with administration of oral penicillin than with intramuscular forms, manifestations of penicillin allergy may occur.

Penicillin is a substance of low toxicity, but it does possess a significant index of sensitization. The following hypersensitivity reactions associated with the use of penicillin have been reported: skin rashes ranging from maculopapular eruptions to exfoliative dermatitis; urticaria; and reactions resembling serum sickness, including chills, fever, edema, arthralgia, and prostration. Severe and often fatal anaphylaxis has occurred (see Warnings). Hemolytic anemia, leukopenia, thrombocytopenia, and nephropathy are rarely observed side-effects and are usually associated with high parenteral dosage.

Administration and Dosage: For Tablets V-Cillin K and for V-Cillin K, Pediatric, the usual dosage ranges from 125 mg. (200,000 units) three times a day to 500 mg. (800,000 units) every four hours. For infants, the daily dosage may be 50 mg. per Kg. of body weight divided into three doses.

Beta-hemolytic streptococcus infections without associated bacteremia may be treated with 200,000 to 400,0000 units three times a day. Therapy should be continued for a minimum of ten days to prevent development of rheumatic fever and/or other serious complications. Dosage for routine streptococcus prophylaxis in patients with a history of rheumatic fever or congenital heart disease may be 200,000 units once or twice daily. When such patients undergo tonsillectomy, tooth extraction, or other minor surgery, the prophylactic dose should be 500,000 units every six hours given two days prior to surgery and for two days postoperatively. If oral medication is not feasible on the day of surgery, parenteral therapy should be considered. Mild to moderately severe pneumococcus pneumonia has been treated effectively with 250 mg. every six hours.

In staphylococcus infections, 400,000 units or more should be given every six to eight hours in conjunction with indicated surgical procedures.

For gonorrhea in males, 500 mg. (800,000 units) every four hours for three doses may be employed; in females, 500 mg. every four haurs for six doses are recommended. Refractory infections generally respond to a second treatment three to four days following completion of the first. Treatment of gonorrhea with severe complications should be individualized, with prolonged and intensive treatment. Patients with a suspected lesion of syphilis should have a dark-field examination before receiving penicillin and monthly serologic tests for a minimum of three months.

How Supplied: Tablets V-Cillin K, U.S.P., 125 mg. (200,000 units), in bottles of 50 and 100; and 250 mg. (400,0000 units) and 500 mg. (800,000 units), in bottles of 24 and 100.

V-Cillin K, Pediatric, for Oral Solution, 125 mg. (200,000 units) per 5 cc. of solution, in 40, 80, and 150-cc.-size packages. [032067]

Additional information available to physicians upon request. Eli Lilly and Company, Indianapolis, Indiana 46206.

Lilly

700867

In peptic ulcer... antacid therapy with a new benefit



CONTAINS A BALANCED COMBINATION OF THE MOST WIDELY USED ANTACIDS— FOR RAPID NEUTRALIZATION. PLUS SIMETHICONE— TO CONTROL THE FACTOR WHICH ANTACIDS ALONE CANNOT INFLUENCE.

Mylanta®

- In Mylanta, aluminum and magnesium hydroxides are balanced to minimize the chance of constipation or laxation and still achieve rapid acid neutralization and pain relief.
- The positive action of simethicone helps relieve the painful gas symptoms which often accompany the peptic ulcer syndrome.
- The nonfatiguing flavor and smooth, nongritty consistency of tablets and liquid encourage continued patient cooperation during long-term therapy.

Composition: Each Mylanta chewable tablet or teaspoonful (5 ml.) of liquid contains: magnesium hydroxide, 200 mg.; aluminum hydroxide, dried gel, 200 mg.; simethicone, 20 mg. **Dosage:** one or two tablets, well chewed or allowed to dissolve in the mouth, or one or two teaspoonfuls of liquid to be taken between meals and at bedtime.

The Stuart Company, Pasadena, California
Division of Atlas Chemical Industries, Inc.

Stuart





Tissue's healing nicely. Yet anxiety slows his steps toward recovery.

By helping overcome anxiety and tension which can thwart the convalescent's progress, EQUANIL (meprobamate) often may play an important role in medical and surgical aftercare.

Cautions: Carefully supervise dose and amounts prescribed, especially for patients prone to overdose themselves. Excessive prolonged use may result in dependence or habituation in susceptible persons—as ex-addicts, alcoholics, severe psychoneurotics. After prolonged high dosage, drug should be withdrawn gradually to avoid possibly severe withdrawal reactions including epileptiform seizures. Side effects include drowsiness and, rarely, allergic or idiosyncratic reactions. These reactions, sometimes severe, can develop in patients receiving only 1 to 4 doses who have had no previous contact with meprobamate. Mild reactions are characterized by urticarial or erythematous maculopapular rash. Acute non-thrombocytopenic purpura with petechiae, ecchymoses, peripheral edema and fever have been reported. If an allergic reaction occurs, meprobamate should be stopped and not reinstituted. Severe reactions, observed very rarely, include angioneurotic edema, bronchial spasms, fever, fainting spells, hypotensive crises (1 fatal case), anaphylaxis, stomatitis and proctitis (1 case) and hyperthermia. Warn patients of possible reduced alcohol tolerance. Should drowsiness, ataxia, or visual disturbances occur, dose should be reduced. If symptoms persist, patients should not operate vehicles or dangerous machinery. A few cases of leucopenia, usually transient, have been reported following prolonged dosage. Other blood dyscrasias—aplastic anemia (1 fatal case), thrombocytopenic purpura, agranulocytosis and hemolytic anemia—have occurred rarely, almost always in the presence of known toxic agents. One fatal case of bullous dermatitis following intermittent use of meprobamate with prednisolone has been reported. Prescribe very cautiously for patients with suicidal tendencies. Suicidal attempts should be treated with immediate gastric lavage and appropriate supportive therapy.

Contraindications: History of sensitivity to meprobamate.

Composition: Tablets, 200 mg. and 400 mg. meprobamate. Coated Tablets, WYSEALS® EQUANIL (meprobamate) 400 mg. Continuous-Release Capsules, EQUANIL L-A (meprobamate) 400 mg.

Wyeth Laboratories
Philadelphia, Pa.

Wyeth® SERVICE TO MEDICINE

Equanil®
(meprobamate)
Wyeth

Professionally posed.

Don't let monilia cut broad-spectrum therapy short...

start with Tetrex-F®

tetracycline phosphate complex-nystatin

Use of broad-spectrum antibiotics can cause fungal overgrowth in the alimentary tract... and give rise to symptoms so troublesome that therapy must be prematurely stopped. Tetrex-F (tetracycline phosphate complex-nystatin) helps you circumvent this problem.

The nystatin can prevent overgrowth of monilia; the phosphate complex delivers tetracycline to the blood rapidly. Side effects are infrequent.

High-Risk Patients

Tetrex-F (tetracycline phosphate complex-nystatin) is especially useful in patients most susceptible to fungal overgrowth during tetracycline therapy: (1) the elderly or debilitated, (2) young children, (3) the diabetic, (4) those on long-term tetracycline therapy, (5) those on steroid therapy, (6) those who have had moniliasis before, and (7) pregnant patients with a history of monilial vaginitis.

When you start with economical Tetrex-F (tetracycline phosphate complex-nystatin), you can complete the full course of broad-spectrum therapy with less chance of losing control elsewhere. A good start for a healthy finish.

PRESCRIBING INFORMATION. For complete information consult Official Package Circular. *Indications:* Infections of respiratory, gastrointestinal and genitourinary tracts and skin and soft tissues due to tetracycline-sensitive organisms, in patients with increased susceptibility to monilial infections. *Contraindications:* The drug is contraindicated in patients hypersensitive to its components. *Warnings:* Photodynamic reactions have been produced by tetracyclines. Natural and artificial sunlight should be avoided during therapy. Stop treatment if skin discomfort occurs. With renal impairment, systemic accumulation and hepatotoxicity may occur. In this situation, lower doses should be used. Tooth staining and enamel hypoplasia may be induced during tooth development (last trimester of pregnancy, neonatal period and childhood). *Precautions:* Bacterial superinfections may occur. Infants may develop increased intracranial pressure with bulging fontanels. In gonorrheal therapy, serologic tests for syphilis should be conducted initially and monthly for 3 months. *Adverse Reactions:* Glossitis, stomatitis, nausea, diarrhea, flatulence, proctitis, vaginitis, dermatitis, and allergic reactions may occur. *Usual Adult Dosage:* 1 capsule q.i.d. Continue for 10 days in Beta-hemolytic streptococcal infections. Administer one hour before or two hours after meals. *Supplied:* Capsules, bottles of 16 and 100. Each capsule contains tetracycline phosphate complex equivalent to 250 mg. tetracycline HCl activity and 250,000 units of nystatin. For Oral Suspension, 125 mg. tetracycline and 125,000 u. nystatin/5 ml., 60 ml. bottles.

BRISTOL

BRISTOL LABORATORIES
Division of Bristol-Myers Company
Syracuse, New York 13201

A Building Block approach to treating hypertension

ABBOTT

With these three therapeutic building blocks you can create a once-a-day regimen to fit almost any degree of hypertension. See the following pages for details . . .



Consider starting your hypertensives on this basic thiazide

ABBOTT

A single daily dose of Enduron provides sodium excretion around the clock

Enduron is a true 24-hour single-dose thiazide. Its sodium excretion is not squeezed into an abrupt peak during the first several hours. It is well-sustained in a plateau-like effect—with little reduction for the first 12 hours, and decline thereafter only gradual.

Potassium loss, by contrast, is low. It reaches an early minor peak, then subsides rapidly. Moreover, since dosage is but once a day, there is but one daily peak of potassium loss. As with all thiazides, however, dietary potassium supplementation should also be considered, especially in long or intensive therapy.

Use Enduron as an ideal starting therapy in mild hypertension. Use it too, as a basic therapeutic building block with which other agents can be joined, for managing your more resistant hypertensives.

Once a day, every day

ENDURON®
METHYCLOTHIAZIDE



DAILY DOSAGE RANGE	Minimum	Usual	Intermediate	Maximum
	2.5 mg. tablet	5 mg. tablet	7.5 mg.	10 mg.

See Brief Summary on final page of advertisement.

To build added response, shift to Enduronyl

The deserpidine component adds enhanced antihypertensive activity

The rauwolfia component of Enduronyl is deserpidine (Harmonyl®), a purified crystalline alkaloid supplied only by Abbott. It augments Enduron with its own antihypertensive and tranquilizing action.

Thus the combined clinical effect of these two therapeutic building blocks in Enduronyl is greater than can ordinarily be achieved with either alone.

To add flexibility, Enduronyl comes in two strengths: regular and Forte. Both provide 5 mg. of Enduron. The variation is where most helpful: in the deserpidine. The tablets are scored, and give a surprisingly wide and economical choice of once-a-day doses (see below).

Choose Enduronyl for your patients in the broad range of mild to moderate hypertension. Patient acceptance is excellent!

Once a day, every day

ENDURONYL®

METHYCLOTHIAZIDE 5 MG. WITH DESERPIDINE 0.25 MG.

ENDURONYL FORTE

METHYCLOTHIAZIDE 5 MG. WITH DESERPIDINE 0.5 MG.



	Minimum	Usual	Intermediate	Maximum
DAILY DOSAGE RANGE	2.5 mg. methyclothiazide 0.125 mg. deserpidine	5 mg. methyclothiazide 0.25 mg. deserpidine	7.5 mg. methyclothiazide 0.375 mg. deserpidine	10 mg. methyclothiazide 0.5 mg. deserpidine
DAILY DOSAGE RANGE	2.5 mg. methyclothiazide 0.25 mg. deserpidine	5 mg. methyclothiazide 0.5 mg. deserpidine	7.5 mg. methyclothiazide 0.75 mg. deserpidine	10 mg. methyclothiazide 1 mg. deserpidine

See Brief Summary on final page of advertisement.

Eutonyl affords a different kind of basic therapy for moderate to severe cases

ABBOTT

Effect tied to reduced peripheral vascular resistance; no central depressant action

Eutonyl is a unique nonhydrazine agent. It is reported to act by reducing peripheral vascular resistance.[1,2]

In clinical trials, significant reductions in mean blood pressure were seen in 84% of patients studied—all were moderate to severe cases. Eutonyl lowers diastolic in proportion to systolic, and in about half of the cases studied, reductions in the sitting and recumbent positions were nearly as great as in the standing position.

Most important: There is no central depressant action. In fact, some patients reported an *increased* sense of well being.

Here, then, is a highly effective *basic treatment* for moderate to severe cases—and one that will not hamper your patient with lethargy or drowsiness while on treatment.

Once a day, every day

EUTONYL®
PARGYLINE HYDROCHLORIDE



DAILY DOSAGE RANGE	Minimum	Usual starting	Intermediate	Maximum
	10 mg. tablet	25 mg. tablet	50 mg. tablet or as needed	200 mg.

1. Brest, A. N., et al., Cardiac and Renal Hemodynamic Response to Pargyline, Ann. N. Y. Acad. Sci., 107-1016, 1963.
2. Winsor, T., Pargyline Hydrochloride, Hypertension, Urinary Tryptamine, and Vascular Reflexes, Geriatrics, 19:598, Aug., 1964.

See Brief Summary on final page of advertisement.

Eutron adds thiazide for enhanced therapy with milder side effects

ABBOTT

Only a 7/4 mm. span between standing and recumbent pressures in clinical trials—reduced chance of orthostatic hypotension

The combining of Eutonyl and Enduron in Eutron permits a significantly greater antihypertensive effect than with either agent used alone. This in turn may allow therapeutic success with lesser dosage—and correspondingly milder side effects.

A significant finding in clinical trials was the drug's action in lowering blood pressure to *nearly equal levels in all body positions*. Total average spread between standing and recumbent readings (after treatment) was only 7/4 mm. Hg.

Thus, in your moderate to severe cases, Eutron affords a usually smooth course of therapy, often with reduced likelihood of orthostatic effects. (The usual precautions against rising suddenly, of course, will always apply.) And, because of the thiazide component, Eutron may be used in the presence of congestive heart failure.



Once a day, every day

EUTRON™

PARGYLINE HYDROCHLORIDE 25 MG.
WITH METHYCLOTHIAZIDE 5 MG.

DAILY DOSAGE RANGE	Minimum	Usual starting	Intermediate	Maximum
	12.5 mg. pargyline hydrochloride and 2.5 mg. methyclothiazide	25 mg. pargyline hydrochloride and 5 mg. methyclothiazide	37.5 mg. pargyline hydrochloride and 7.5 mg. methyclothiazide	50 mg. pargyline hydrochloride and 10 mg. methyclothiazide

See Brief Summary on final page of advertisement.

TM—Trademark

707075-R

ENDURON | ENDURONYL

METHYCLOTHIAZIOE

Each tablet contains
Methyclothiazide 5 mg. with
Deserpidine 0.25 mg. or 0.5 mg.

Indications: Enduron is used to control edema and mild to moderate hypertension; also used with other drugs for hypertension. Enduronyl is used in mild to moderately severe hypertension; when used with Enduronyl, more potent agents can be given at reduced dosage to minimize undesirable side effects.

Contraindications: Neither Enduron nor Enduronyl should be used in severe renal disease (except nephrosis) or shutdown; in severe hepatic disease or impending hepatic coma; in patients sensitive to thiazides. Hepatic coma has been reported as a result of hypokalemia in patients receiving thiazides.

Enduronyl is contraindicated in patients with severe mental depression and suicidal tendencies, active peptic ulcer, or ulcerative colitis.

Warnings: Consider possible sensitivity reactions in patients with a history of allergy or asthma. If added potassium intake is indicated, dietary supplementation is recommended. Enteric-coated potassium tablets should be reserved for cautious use only when adequate dietary supplementation is not practical because those tablets may induce serious or fatal small bowel lesions consisting of stenosis with or without ulceration. These small bowel lesions have caused obstruction, hemorrhage and perforation frequently requiring surgery. Medication should be discontinued immediately if abdominal pain, distension, nausea, vomiting or GI bleeding occurs.

Precautions: Use thiazides with caution in severe renal dysfunction, impaired hepatic function, or progressive liver disease. In surgical patients, thiazides may reduce the response to vasopressors and increase the response to tubocurarine. Use thiazides with caution in pregnancy (bone marrow depression, thrombocytopenia, or altered carbohydrate metabolism have been reported in certain newborn infants). Also reported have been: blood dyscrasias including thrombocytopenia with purpura, agranulocytosis and aplastic anemia; elevations of BUN, serum uric acid, or blood sugar. Symptomatic gout may be induced. Antihypertensive response may be enhanced following sympathectomy.

Use Enduronyl with caution in patients with a history of peptic ulcer, as rauwolfias may increase gastric secretion. Discontinue at the first sign of mental depression. Rauwolfia alkaloids may increase hypotensive effects of surgery or anesthesia, and should be discontinued two weeks prior. They also lower the convulsive threshold and shorten seizure latency. In epilepsy, dosage adjustment of anticonvulsant medication may be necessary. Alcohol, barbiturates, or narcotics may potentiate action of deserpidine.

Adverse Reactions: During intensive or prolonged therapy, guard against hypochloremic alkalosis and hypokalemia (especially the latter if patient is on digitalis). All patients should be observed for signs of hyponatremia ("low-salt" syndrome). Reported thiazide reactions include: anorexia, nausea, vomiting, diarrhea, headache, skin rash, dizziness, paresthesia, weakness, photosensitivity, jaundice, and pancreatitis.

Reported rauwolfia reactions include: nasal stuffiness, nausea, weight gain, diarrhea, aggravation of peptic ulcer, epistaxis, skin eruption, and reduction of libido and potency. Excessive drowsiness, fatigue, weakness, and nightmares may signal early signs of mental depression.

EUTONYL | EUTRON™

PARGYLINE HYOROCHLORIDE

Each tablet contains
Pargyline Hydrochloride 25 mg.
with Methyclothiazide 5 mg.

Indications: For treatment of patients with moderate to severe hypertension, especially those with severe diastolic hypertension. Not recommended for patients with mild or labile hypertension amenable to therapy with sedatives and/or thiazide diuretics alone. It is desirable to establish the dosage of Eutron by administering component drugs separately.

Contraindications: Pheochromocytoma, advanced renal disease, increasing renal dysfunction, paranoid schizophrenia and hyperthyroidism. Hepatic coma has been reported as consequence of hypokalemia with thiazide therapy. Until further experience is gained not recommended for patients with malignant hypertension, children under 12, or pregnant patients.

Concomitant use of the following is contraindicated: other monoamine oxidase inhibitors; parenteral forms of reserpine or guanethidine; sympathomimetic drugs; foods high in tyramine such as cheese; imipramine and amitriptyline, or similar antidepressants; methyldopa. 2 week interval should separate therapy and use of these agents.

Methyclothiazide is contraindicated in patients with known sensitivity to thiazides.

Warnings: Pargyline hydrochloride is a monoamine oxidase inhibitor. Warn patients against eating cheese, and using alcohol, proprietary drugs or other medication without the knowledge of the physician. When indicated, alcohol, narcotics (meperidine should be avoided), antihistamines, barbiturates, chloral hydrate, and other hypnotics, sedatives, tranquilizers, or caffeine, may be used cautiously in reduced dosage. In emergency surgery ¼ to ⅓ the usual dose of narcotics, analgesics, and other premedications should be used avoiding parenteral administration where possible. Carefully adjust dose of anesthetics to response of patient. Withdraw pargyline two weeks before elective surgery.

Warn patients about the possibility of postural hypotension. Those with angina or coronary artery disease should not increase physical activity with an improvement in well being. Pargyline may lower blood sugar.

Avoid use of enteric-coated potassium tablets, as these may induce serious or fatal small-bowel lesions consisting of stenosis with or without ulceration. These small-bowel lesions have caused obstruction, hemorrhage and perforation frequently requiring surgery. Medication should be discontinued immediately if abdominal pain, distension, nausea, vomiting or GI bleeding occurs. These products contain no added potassium salts and if added potassium intake is desired, dietary supplementation is recommended. Coated potassium tablets should be reserved for cautious use when adequate dietary supplementation is impractical. In patients with a history of allergy or asthma the possibility of sensitivity reactions should be considered.

Precautions: Measure blood pressure while patient is standing to determine antihypertensive effect. Use with caution in hyperactive or hyperexcitable persons. Such persons may show increased restlessness and agitation. Withdraw drug during acute febrile illness. Watch patients with impaired renal function for increasing drug effects or elevation of BUN and other evidence of progressive renal failure; withdraw drug if such alterations persist and progress. Use with caution in patients with liver disease. As with all new drugs, complete blood counts, urinalyses, and liver function tests should be performed periodically. With prolonged therapy, examine patients for change in color perception, visual fields and fundi. Also reported have been: blood dyscrasias including thrombocytopenia with purpura, agranulocytosis and aplastic anemia; elevations of BUN, serum uric acid, or blood sugar. Symptomatic gout may be induced. In surgical patients thiazides may reduce response to vasopressors and increase response to tubocurarine.

Adverse Reactions: Pargyline may be associated with orthostatic hypotension. Mild constipation, slight edema, dry mouth, sweating, increased appetite, arthralgia, nausea and vomiting, headache, insomnia, difficulty in micturition, nightmares, impotence, delayed ejaculation, rash, and purpura have been encountered with pargyline. Hyperexcitability, increased neuromuscular activity (muscle twitching) and other extrapyramidal symptoms have been reported in a few patients with reduced cardiac reserve.

During intensive or prolonged therapy, guard against hypochloremic alkalosis and hypokalemia (especially the latter if patient is on digitalis). Observe all patients for signs of hyponatremia ("low salt" syndrome).

Reported thiazide reactions also include anorexia, nausea, vomiting, diarrhea, headache, dizziness, paresthesia, weakness, skin rash, photosensitivity, jaundice, and pancreatitis. Nocturia has been observed with the combination.

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STANDARD CLAIM FORM

APPROVED BY THE OKLAHOMA STATE MEDICAL ASSOCIATION AND THE ASSOCIATION OF HEALTH AND ACCIDENT INSURORS OF C

INSURANCE COMPANY | ADDRESS

TO:

ATTENDING PHYSICIAN'S REPORT

1. PATIENT'S NAME | 2. ADDRESS

4 DIAGNOSIS (EXPLAIN COMPLICATIONS)

5 ADDITIONAL DIAGNOSES (CHRONIC DISEASE OF DEFECT FOUND DURING PRE

6. DATE OF ONSET | 7 DATE FIRST CONSULTED | 8 DUE TO PREGNANCY ☐ YES ☐

11. SURGICAL OR OBSTETRICAL PROCEDURES (DESCRIBE)

12. IF HOSPITALIZED, NAME AND ADDRESS OF H

15 NAME AND ADDRESS OF OTHER P

COMPLETE IF PATIEN

16 TOTAL DISAP

FROM

17 P

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PLEASE ATTACH TO COMPLETED INSURANCE CLAIM FORM

STATEMENT FOR PROFESSIONAL SERVICES RENDERED

APPROVED BY THE OKLAHOMA STATE MEDICAL ASSOCIATION

PHYSICIAN'S NAME | PATIENT'S NAME

ADDRESS

COMPLETE FOR MEDICAL CARE ONLY: AT HOSPITAL, HOME, OR OFFICE
GIVE THE DATES OF TREATMENT BY INSERTING MONTH AND YEAR. INDICATE EACH
H—HOSPITAL V—HOME O—OFFICE OR CLINIC

MONTH AND YEAR	1	2	3	4	5	6	7	8	9	10	11	12	

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Medical Services: The Small Town and the Future

THE SOCIAL AND economic aspects and the importance of health services in small communities simply have not been recognized by anyone but those who live there—but there is nothing more basic to the continued existence of a community. In a small town the health industry is usually its largest industry in terms of dollar exchange and the numbers of people employed 365 days a year, 24 hours a day. We have conducted studies in Oklahoma that suggest that when a one doctor town loses its only physician, it precipitates a chain reaction. It becomes only a matter of time until the community finds it cannot retain, nor recruit, good teachers for its schools, the drugstore falters — and finally fails—next is the newspaper and then the bank—the town is doomed.

Are small communities worth saving? Emphatically yes! Given health services and good schools, the small community not only can grow, it can attract new industry and prosper. More important—and I am a pediatric specialist—there is, in my opinion, no better place in the world to rear children. I believe that the time is fast approaching when an aggressive rural chamber of commerce approach will be able to attract many people from the cities, provided they have something to offer in the way of an attractive community with good health services and good schools. The confused jungle of the very large city will within the next decade make the progressive small town look like a paradise.

We hear much of the urbanization of our population with predictions that 70 to 75 per cent of our people will live in the metropolitan areas by 1975. This sad state of affairs may come to pass but if it does, we cannot continue to ignore the 20 to 30 million people who will still reside in rural areas. Available medical and health services are as essential to those who live in the semi-isolated rural area as they are in the large cities.

We also hear much of the truly remarkable achievements of our medical scientists in the large cities but these achievements have to be weighted against the deficits in health care available to those who do not reside in the metropolitan areas. Let me illustrate. Not many months ago a fine story broke at the Medical Center. The papers all carried it—the same superb surgeon who had re-implanted the avulsed arm of OSU's Bob Swafford had just performed the first successful operation in Oklahoma for the transposition of all the great vessels to the heart. It was a worthy story and I am proud of our surgeon and his team. The story you did *not* get may have had more meaning. At almost the same time, a child was rushed to Children's Hospital from a small community only 60 miles away—she was dead on arrival. Autopsy demonstrated the cause of death to be a pneumococcic pneumonia—one that could have been treated with one injection of penicillin—but she lived in a small community that no longer had a doctor. This, to me, is an intolerable paradox.

Let me illustrate again. Soon after I became Dean I was visited by a man who at the time was on the Board of the State Regents for Higher Education. He found it difficult to understand why I could not order a doctor to set up practice in his home town—a town that no longer has a doctor. I could not help him much, but he helped me. His parting comment was, "Doctor, do you have any idea what it is like to go to bed at night and know that if anything happened to you or your loved one, that you wouldn't have the slightest idea of how nor where to call for help?" His plea reflected a basic human need that has become obscured by a sophisticated scientific world.

To feel secure the human being needs the comfort of knowing to whom, where, and how to turn when sick, in pain, or troubled. His emotional stability requires an identification with someone he can call his "family doctor"—and this might be any kind of a doctor. Rural communities have very poor prospects for the future if we cannot provide this kind of security. Can this problem be met?

editorial

Since 1950 the total number of doctors in Oklahoma has risen from 1848 to 2278, but these figures include physicians in research, education, military service, and retirement —and ignores a five fold increase in the demand and utilization of physicians, caused by technological advances in medicine, rising incomes, the escalation of government sponsored health programs and a public made knowledgeable by enlightened reporting. It also ignores the serious maldistribution of physicians, the shortages of supporting health personnel, and the kinds of physicians available.

In 1931—83 per cent of physicians in private practice were in family or general practice—in 1965 only 36 per cent were in general practice. In 1965 there was a national physician population ratio of one physician/641 persons. In Oklahoma this ratio is 1/1200 persons—but this does not tell the story. The combined ratios in Tulsa and Oklahoma Counties show one physician for 973 persons, but if you go to the seven counties comprising Southeastern Oklahoma, the ratio is one physician/2516 persons, and in Grant County (NW) it is 1/8000.

Twenty-three counties in Oklahoma have four or less active M.D.'s—of these—five counties have four active physicians, six counties have three active physicians, seven counties have two active physicians, and five counties have only one active physician.

In the counties with only one or two physicians, half the physicians are more than 65 years of age. Thus, we see that rural areas not only have fewer physicians, but they are older ones and older physicians usually must assume lighter patient loads, hence are less able to care for as many people. Also, the typical rural community practice is solo and this means one x-ray, one nurse, etc., per doctor—all of which impairs productive and economic efficiency. The rural physician not only has the responsibility for three to four times as many people —the patients are scattered and spread miles apart, and this too can make solo practice in the rural area relatively inefficient.

The major causes of physician dissatisfaction with rural practice include such problems as long, unrelieved working hours, inadequate time to study or attend refresher courses, lack of hospital appointments, the lack of educational stimuli and the stimulation of other colleagues with whom they can talk "shop." Income and economic factors have little to do with physician dissatisfaction in rural practice. Not the least of the problems is the absence of social and cultural opportunities for the doctor's wife and family. Too many rural communities have failed to take pride in the appearance of their communities. They seem to hide behind the excuse "we can't afford it" as they fail to maintain their stores, their homes, their schools, and the municipal responsibilities.

We hope to learn some facts as we attempt to assist rural communities to solve their own problems. The medical school is not going to go into the business of practicing medicine. We want to learn how best to utilize paramedical personnel in a rural setting, the economy of such personnel, how we can attract high caliber physicians, how to provide them an intellectually and professionally satisfying environment in a rural area, how to utilize such a program for teaching purposes, research in the packaging and delivering of health services, and how best to provide exemplary care in "have-not" medical care areas. We feel that this can and should be done in a manner acceptable to other physicians, acceptable economically and socially to both the receiver and the provider, and remain consistent with the principles of a free society.

Following the reassessment and definition of the University of Oklahoma Medical Center's community responsibilities, an outline for "Project Responsibility" was presented to the Oklahoma chapter of the American Academy of General Practice at its annual meeting in February, 1965. It was officially approved by this group of physicians and was subsequently approved by the Board of Trustees of the Oklahoma State Medical Association.

What is "Project Responsibility"? Basically, it is a four-phase program with each phase running concurrently.

Phase 1—In cooperation with appropriate public and voluntary health agencies, phase 1 provides for a statewide inventory study of the health science personnel now serving the people of Oklahoma. The goal is to

define state and community needs by (1) identification of number, kinds, ages, and location of physicians and allied health science personnel now in the state, and (2) identification of the area of shortages, numbers and kinds (where are they, where are they not, and who needs what).

Phase 2—This second phase provides for projection of current and anticipated needs based on (1) findings of the study, (2) needs and expectations of the public, (3) needs and expectations of the professions, (4) needs of the University, and (5) the social forces at work.

Phase 3—Re-evaluate the medical school curricula and hospital training programs on the basis of documented needs, and (1) develop an appropriate undergraduate education program in family medicine, attuned to the future, (2) develop a community resident training program in family medicine, (3) strengthen the allied health programs by establishing within the medical center a school of allied health sciences in which to develop appropriate educational and training programs in allied health fields, and (4) do this in relation to needs.

Phase 4—The fourth phase provides for "pilot" study programs in "packaging" of medical services in a "have-not" rural area in order (1) to develop a rural community health center geared to the modern concept of family medicine, (2) to utilize this center for the development of a university approved program in family medical care, (3) to study methods for increased efficiency and economy of effort in providing medical services in rural setting, (4) to provide exemplary medical care in a rural setting, (5) to attract family physicians to rural areas, and (6) to stimulate rural communities to participate in improving their own cultural environment.

The community medical center will be located in a "have-not" rural area; that is, a rural area not now having medical coverage. The community also has responsibilities: (1) to assist in the building of the community health center facility for which rent will be paid by the project, (2) to work with the personnel of the health center so that they will feel a part of the community life, (3) to provide continuing support to the center when it has been demonstrated that good medical care has been made available to them, and (4) to provide a prototype of rural health services that may be utilized elsewhere.

The community health center will consist of professional offices and treatment rooms for a minimum of three physicians and appropriate space for a supporting force of paramedical workers. The community health center will be considered as an integral part of the University of Oklahoma Medical Center's teaching program, as an extension of a newly formed Division of Family Medicine. The physicians in the group will have active teaching appointments at the University. Each physician will be expected and required to schedule two or three days each month at the Medical Center in Oklahoma City. Their days will be spent as both teacher and student. They will have academic contact with students, interns, residents, and active staff, attend ward rounds, and take part in conferences. This assignment will have three basic purposes: (1) to provide a method whereby the group physicians learn the latest advancements in diagnosis and treatment by providing intimate contact with the kind of medicine theoretically and actually available; (2) to provide the university's teaching staff an opportunity to acquaint themselves with the knowledge of the everyday problems in medical practice and hopefully to provide insight, sympathy, and respect for the family physician in the field; and (3) to stimulate the interest of undergraduate students, interns, and residents in the professional opportunities offered by such an area of practice.

In addition, "sabbatical" time would be scheduled from the rural commuuity health center for the personnel to participate in longer and more formal educational programs either at the University of Oklahoma Medical Center or some other center.

There will be assigned to the community health center one or more residents in family medicine who will spend specified time in what might be called a "house staff preceptorship" in a rural setting. This automatically makes the staff "teachers" in the true sense of the word. It is also expected to provide a springboard for the recruitment for family practice in similar rural community health centers. The many advantages

of a group relationship in private practice while remaining an active participant in medical education should be apparent.

Teaching consultants, both those who are part-time volunteer (practicing) physicians on the medical center faculty and full-time professors, will be assigned scheduled visits to the community health center. These will not be primarily to consult with the physicians about a specific case, but rather to help and guide the group physicians in the evaluation of patient and community problems. This will also provide intellectual exchange and an opportunity for the visiting physicians to learn the problems of such a practice, enhancing their ability to present problems and solutions of actual rural practice to their students and house staff. A big dividend should be a demonstration to the medical center faculty that good medicine is and can be practiced in rural areas.

With three physicians and a resident there will be time for the individual physicians to read, to spend time with his family, either at home or on recreational trips, to go to larger cities for cultural activities, and to engage each other and the visiting consultant in stimulating medical thought and conversation. One deterrent to the recruitment of physicians in practice in rural settings has been the necessity for them being perpetually on call. Without qualified relief, a physician and his family are unable to enjoy cultural and community pursuit essential for personal growth, interest, and development.

In addition to physicians, the center would be staffed with (1) registered nurses and aides; (2) a public health nurse, whose duties would be similar to a visiting nurse for pre- and post-care as directed and supervised by the physicians, to maintain a file on high-risk families and patients; (3) a professional social worker who under the doctors' supervision, will listen to and assist with individual and family problems, evaluate the families' ability to pay full fees or no fees, and when indicated, complete forms and arrange for agency support. Technicians will be employed as dictated by the needs of the center. A receptionist and business manager-bookkeeper will round out the personnel except for other nonprofessional personnel as required. There will be visiting professors and students of social work, psychology, anthropology, nursing, laboratory technique, public health work, and others from the University not only for the purpose of teaching, but learning and as a means of stimulating interest for future staffing of this or other rural centers.

The physicians will charge standard fees for their services, as will the hospital portion of the center. The physicians' fee schedule will be one that is acceptable to the Oklahoma State Medical Association.

There is always a presumed time lag from the opening of an office until physicians establish a living income. This facility will be no different, because many of the people of the communities will have been under the care of physicians elsewhere. Many will have developed close physician-patient relationships they may be reluctant to sever; hence, it undoubtedly will require a period of time for the clinic physicians to demonstrate the medicine of a rural group family clinic. For these reasons and to assist in the initial recruitment of qualified physicians and other professional people, the personnel will be guaranteed a minimum annual income. If collections do not equal the guaranteed minimum, the difference will be paid to them from trust funds to be developed by the university medical center. If more than the minimum is earned, it belongs to the staff. This provides the incentives of the free enterprise practice of medicine and the security of a known basic income.

With such a plan of action the Oklahoma Medical Center is taking cognizance of its medical social responsibility to the state by actively investigating and developing methods designed to solve the health manpower and health services shortages facing its people. In this way the medical center assumes the obligations of a community resource to utilize its potential of knowledge and talents to work with communities in solving their own problems.

Most communities sense the desirability of having a hospital and are willing to help finance it, but too many of them think only in terms of solving their problems by erecting a building. One of my good friends in the legislature tells me that until his town

Continued on Page____.



Recently a patient (a prominent doctor) was sent to one of our leading hospitals for an outpatient x-ray procedure. He hung his clothes in a corner of the recovery room and went across the hall to the x-ray department. Later his itemized hospital bill showed a charge of $4.00 for the use of the recovery room.

In another city a patient went to the outpatient department for a sternal marrow puncture, a procedure he had been subjected to before. At the close of the operation the doctor reached for a band-aid to apply to the patient's chest. As he did so the patient reached into his own pocket, brought out a band-aid and handed it to the doctor, saying, "Use this one, Doc. Last time I paid $1.50 for one of those hospital band-aids."

A third patient left the hospital after a stay during which he was not too ill and hence wore his own pajamas the whole time. His bill for hospital gowns was $10.00.

These are all true stories and I am sure many of you can recite other even more preposterous examples of hospital charges. They merely illustrate the fact that somehow we have failed to insist that common sense be applied to hospital charges. We doctors have allowed the hospitals to take over their own pricing structure and this is as it should be. After all, you and I are not cost accountants, nor should we be. Also, our hospitals are well run by trained people and there is no need for us as physicians to concern ourselves with every facet of hospital administration. But since my patients, and yours, think we set all charges, we must become more aware of hospital pricing structures.

All hospitals should have regular communications between the hospital business people and the medical staff simply to sit down and go over the routine charges in the light of reasonableness. We can assist the hospitals in this area and we should do so. This could be done most informally and easily. In many places the chief-of-staff and the hospital administrator could get together periodically. In other places a committee could meet with the business staff in the spirit of helpfulness. However it is done we must work more closely with our hospitals to represent the patient side of medical care to our hospital businessmen. We know better than anyone else what the patient wants and needs and it is up to us to be the patient's advocate, if you will, in hospital matters. Next time you see your hospital administrator, indicate to him that we are interested and available for consultation on his hospital pricing problems. I am sure that he will be receptive and grateful for your help. Our hospital businessmen are able and conscientious and I am sure they will welcome any assistance we can give them. □

Sincerely yours,

Maxwell A. Johnson MD

OSMA JOURNAL/scientific

The Treatment of Compound Fractures Without Antibiotics

WILLIAM A. MILLER, M.D.

No infections occurred in this writer's small series of private patients with compound fractures in which antibiotics were deleted from their treatment.

THE DEVELOPMENT of antibiotics was obviously one of the greatest medical advances of this century. However, most physicians have sometimes misused antibiotics in some degree. The prophylactic use of antibiotics after clean surgical cases is one of the most glaring examples of this misuse. Recent literature overwhelmingly condemns the practice. Several series of cases seem to indicate not only that infections are not prevented by the prophylactic use of antibiotics after clean surgery, but even that the incidence of postoperative infections may be greater after their use. The papers discussing orthopedic cases all exclude open fractures, although they do not say whether or not open fractures were given antibiotics.

As a medical school graduate of 1947, the author probably had a subconscious idea that antibiotics were an essential element in wound healing, just as protein. However, in 1960 the author stopped using antibiotics after all surgery, except for compound fractures or cases with infection before surgery. At first, if the patient developed fever up to 102°, penicillin or a broad spectrum antibiotic was given. For the last three or four years, antibiotics have not been given unless this degree of fever lasts longer than 48 hours, the patient appears toxic, or the wound appears inflamed.

Since July, 1961, prophylactic antibiotics have been omitted from the treatment of all compound fractures. General principles of treatment were similar for these cases. Each case was treated within 12 hours of injury except for one severely comminuted olecranon with a dislocation of the elbow and a three inch gaping wound over the bone which was 48 hours old. General anesthesia was used in each case, except for one compound Colles fracture.

Each case was treated by debridement of all devitalized tissue, which is minimal in most civilian cases. Thorough irrigation with normal saline was done to the extent of incurring the wrath of the clean up crew. Care was taken not to force the irrigation fluid into uninvolved tissue planes. One compound Colles fracture received only irrigation since there was no devitalized tissue to remove.

Metallic internal fixation material was used as indicated by the type of injury, regardless of the compound nature of the frac-

Presented April 1st, 1966, at the Third Triannual Residents' Reunion of the Orthopedic Department of the University of Oklahoma School of Medicine.

Patient (St. Anthony Hospital Number)	Age	Hospital days	Bones with compound fracture	Other fractures	Name of operation	Highest temperature	Complications	Type of wound	Type of fixation
1. C.H. (443577)	54	58	Multiple metatarsals	Fracture-dislocation of hip	Debridement, manipulation	99.8	Tissue slough	Crush	Plaster splints
2. T.P. (Outpatient)	22	0	Radius	None	Irrigation, manipulation	Not taken	None	Perforating	Plaster splints
3. G.S. (J457030)	63	11	Olecranon with dislocation of elbow	Acromioclavicular dislocation	Debridement, open reduction	101.6	None	Lacerating	Intramedullary pin in ulna, plaster splints
4. K.R. (383716)	63	3	Ulna	Radius, same arm (not compound)	Debridement, manipulation	99.2	None	Perforating	Plaster splints
5. R.M. (408411)	36	59	Femur	None	Debridement, manipulation	104 next day dropping to 100.6 second day	None	Bullet	Kirschner wire traction, followed by hip spica
6. B.J. (46-73-01)	32	5	Lateral malleolus with dislocation of ankle	None	Debridement, open reduction	102.4 third day, dropping to 101.2 fourth day	None	Encircling one-third of circumference of ankle	Plaster splints
7. L.S. (391327)	8	8	Tibial tuberosity with avulsion of patellar ligament	None	Debridement, open reduction	101	None	Lacerating	Plaster splints
8. M.G. (424506)	20	3	Lateral femoral condyle with bullet in knee joint	None	Debridement, arthrotomy	99.6	None	Bullet	Plaster splints
9. G.W. (390891)	7	26	Femur	None	Debridement	102	None	Perforating	Kirschner wire traction, followed by hip spica
10. G.B. (L438285)	30	10	Patella	None	Patellectomy	99.8	None	Lacerating	Plaster splints
11. R.B. (455963)	11	6	Tibia	Opposite tibia	Debridement, open reduction	99.2	Tissue slough but plate not exposed	Crush	Plate and screws, plaster splints
12. G.L.W. (44-76-05)	11	3	Ulna	Radius, same arm	Debridement, open reduction	100	Radius slipped requiring second manipulation	Perforating	Plaster splints
13. B.R. (44-86-85)	23	13	Talus and lateral malleolus	Ulna	Debridement, open reduction	99.8	Late avascular necrosis of body of talus	Encircling nearly one-half circumference of ankle	One pin in talus, plaster splints
14. D.P. (47-89-56)	14	10	Femur	Radius	Debridement, open reduction	101.6	None	Multiple perforating	Intramedullary pin, plate, and seven screws

ture. The metallic material was kept to a minimum, however. Although this subject is somewhat controversial, a proper internal stabilization many times relieves considerable pressure on the soft tissues, and thus promotes soft tissue healing. When infection occurs, the fixation material is often blamed, even when the culprit may be inadequate surgical technique or the nature of the injury.

All wounds except penetrating or perforating wounds were very loosely sutured, using chromic catgut in the muscles and fascia, plain catgut in the subcutaneous tissue, and silk in the skin. Plaster immobilization or traction was applied as indicated.

All patients were given a tetanus toxoid booster if immunized previously. Tetanus antitoxin was given if the patient had not been previously immunized, since human globulin was not available.

The wounds were dressed routinely 48 hours after surgery, but 24 hours after surgery if the patient had a temperature of 102° or more. This not only offered a look at the condition of the wound, but released any hematoma or serum that had become trapped by a hard dressing stuck to the skin by clotted blood. If there was much bloody drainage, the wound was dressed again in another 48 hours; otherwise, it was dressed again at the end of one week.

From July, 1961, until April, 1966, 14 patients with compound fractures of major bones were treated personally without the use of antibiotics. In none of these cases did infection develop. These included four femurs, two tibias, two ulnas, one radius, one patella, one fibula with an ankle dislocation, one fibula with a fracture-dislocation of the talus, one olecranon with a dislocated elbow, and multiple metatarsals in one foot. Three of the 14 cases required metallic internal fixation, the most extensive material being an intramedullary pin supplemented by a plate and seven screws in one femur. Two of the femur fractures were from low velocity bullet wounds. Two femurs were treated by Kirschner wire traction. The case with the multiple compound metatarsals also had a fracture-dislocation of the hip requiring prolonged hospitalization for traction. One radius was treated as an outpatient. Excluding this outpatient and the three traction cases, the average hospitalization time of the remaining ten cases was seven days. Two cases with crush type injuries developed some tissue slough. One of these was over a plated tibia which still healed promptly. The other was over the multiple metatarsals which were so severely comminuted that they settled considerably. The head of the first metatarsal protruded through the wound and dessicated. Several months later a Mayo bunionectomy was performed which provided skin for wound closure. The patella case received tetracycline for less than 24 hours postoperatively and this was ordered by a new resident who was not familiar with our routine. All the other cases received no antibiotic during their total treatment.

Cases deleted from this report include two cases treated in conjunction with another physician who insisted on antibiotics for his portion of the case. Also deleted is one compound radius whose local physician gave her penicillin for several days after she left Oklahoma City, although there were never any signs of infection. One crushing injury to the knee with a chip off the femoral condyle early in this period developed a tissue slough and was given antibiotics starting two days after surgery, but a negative culture report was received. One other radius early in the period received tetracycline beginning immediately after surgery. Interestingly enough, that was the only case of infection in a major bone fracture during this study period. He developed osteomyelitis which resulted in slight shortening of the radius.

In December, 1961, one patient with a fracture of the fourth metacarpal communicating with a human bite was given Bicillin

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and chloramphenicol. Although only a few hours old, the wound appeared infected when first seen.

This series does not include compound fractures of the phalanges of the fingers or toes. Most of these have been treated as outpatients in the hospital or office, and it has been difficult to isolate these records retrospectively. Most fingers and toes were treated under digital block anesthesia, although general anesthesia was used several times when there were multiple fingers involved or the circulation to the fingertip seemed precarious. The records could be found on 18 patients with compound fractures of phalanges, some of which were multiple. None of these received any antibiotic and none developed infection. One case of minor infection of a distal phalanx can be remembered that cleared up in a few days on tetracycline, but this record could not be located.

During this time about the same number of tendon and peripheral nerve repairs were performed, all without the use of prophylactic antibiotics. Only one infection occurred, and that was in a repair of a lacerated Achilles tendon. The tendon separated, was repaired again after several months, and a good result was finally obtained.

This series includes no high velocity missile wounds, shotgun wounds, or fecally contaminated wounds, since none were treated during this time. If they had been, they would have been left open for free drainage, but without the use of primary antibiotics. Metallic internal fixation would not have been used.

It is believed by the author that adherence to good surgical principles of debridement and irrigation of fresh compound fractures with proper fixation renders the use of primary antibiotic therapy unnecessary. If infection develops, it can be recognized and treated better than if the infection has been masked by prophylactic antibiotics. Reactions from antibiotics are also avoided.

This is not to be construed as advice to delay immediate antibiotic treatment for early osteomyelitis, septic arthritis, or other infections.

Although this series is obviously of no statistical significance, it is hoped that presentation of this small group of private patients will show that compound fractures can be treated satisfactorily without antibiotics.

SUMMARY

Fourteen unselected compound fractures of major bones were treated without the use of antibiotics after debridement, irrigation, and open reduction when indicated. No infections occurred in this small series of private patients. It is the author's opinion that prophylactic antibiotics are not indicated after compound fractures. □

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Pediatric Trifles

CARROLL M. POUNDERS, M.D.

A look at the problems associated with infant feeding.

THE VERY TITLE of this paper immediately warns the reader that nothing profound is being undertaken. There have been so many phenomenal developments in pediatrics, as in all fields of medicine, that we are in some danger of being carried away with ourselves. It would be easy for us to develop too much self satisfaction from thinking of our past accomplishments and to fall into the error of thinking we are actually as good as the public believes we are. Pediatrics has never been, is not now and will never be a finished specialty. We have been able to build on to the vast amount of knowledge that has been handed down to us and to make additions to it without wholly refuting very much of it. In the same manner the beliefs that guide us today will be changed and will have additions made to them tomorrow. So it turns out to be a matter of constantly searching for truths without ever being certain that we have found them.

To recite the many facts connected with the reduction of the mortality and morbidity rates in pediatrics would serve only to repeat well known and boresome statistics. These children live, are generally well nourished and are protected from most of the dreaded diseases. In fact most of them grow to be larger people than their parents. However, we may be so absorbed with these scientific achievements that we may tend just a little bit to overlook the patient himself. Many of these people who enjoy this security from the morbid disease and who have the assurance of longevity do not live as comfortably and as satisfactorily as they might. The burden of correcting this situation does not lie altogether upon us but it is hard to tell where our responsibility shades off, so we had better assume our part in attacking such problems.

Much has been said and written about the crying babies and especially the nightly criers. We know that the evenings and nights are dreaded times for many parents, especially the new ones. We have heard almost every kind of explanation for this. It is due to overfeeding, the milk is too warm or too cold, the feedings are too frequent. or the feedings are not frequent enough. The baby is too weak to nurse well or he is too strong and vigorous. The formula contains too much fats, too much carbohydrates, the baby is just spoiled or there is maternal rejection. A new explanation is that of growing pains due to rapid bone growth.

Since the causes of colic are just about as poorly understood and as frustrating as ever, many of us would like to just turn our backs on it and forget the whole thing. We

would like to wait for the baby to outgrow this phase of life provided nutritional requirements seem to be met and the monthly weight gain is satisfactory.

Admittedly, there can be a multiplicity of causes for the discomforts that are so common to early life and which are so upsetting to parents and attendants. One or more of the causes listed above may actually be at fault. Doubtless a proportion of such disturbing conditions results from brain trauma coincidental with difficult passage through the birth canal. Such cases are difficult to manage and require much patience until the child outgrows the injury. I find it hard to pick out and diagnose them.

I am confident that many, and perhaps most of the difficulties under discussion have a cause that is fairly simple and one that we can do much to remedy. In most cases food sensitivity fits the picture too well to be discarded or ignored. As pediatricians, the more factual understanding we can acquire about food sensitivity, or allergy in general, the better we will be able to serve our patients. It is too common for us to depend on specialists for help.

It has been well established that a certain per cent of unsplit molecules of such a food as cow's milk gets by the intestinal filter and even past the phagocytic protective cells, enters the circulation and comes into contact with the various body cells. In the light of what we know about the mechanism of cellular resistance and immunity it is inconceivable that these foreign protein molecules could have access to the body cells without stimulating reactions which, in some instances at least, may produce clinical symptoms.

If breast feeding were universally carried out such a paper as this would be uncalled for. This, then is a good place for a short discussion on that subject. The advantages of breast feeding over bottle feeding are so well understood and so widely accepted that they do not need to be backed up by any arguments here. Oliver Wendell Holmes said that "a pair of substantial mammary glands has the advantage over the two hemispheres of the most learned professor's brain in the art of compounding a nutritive fluid for infants." It might be said that such an advantage also exists over the best brains in the laboratories of the pharmaceutical manufacturers.

In spite of the preponderance of opinion favoring breast feeding it is a fact that less than half of the something over 4,000,000 babies born in this country each year will ever be put to the breast. Of those that are put to the breast one-third to one-half of them will stop within a month. Very few will be nursed longer than six months. Our culture is the first one in history to practically abandon a sound physiological practice that has been followed since the beginning of time.

One must admit that most of the major hazards connected with this departure have been resolved: (1) There is a good variety of formulas. (2) Nutritional requirements are well met. (3) Contamination from pathogenic bacteria and other harmful substances is well controlled. (4) Vitamins and other supplements are given in plentiful amounts. The knowledge of these facts tends to lull many of us into the feeling that we have few or no problems connected with infant feeding and that it makes little difference whether the baby is fed on the breast or on the bottle. But we should not allow ourselves to forget the deeply ingrained reasons, physiologically, psychologically and otherwise that are universally accepted as favoring breast feeding.

To better promote breast feeding we must seek the cooperation of the obstetrician. The matter is usually decided during the last three months of pregnancy and by the time the pediatrician appears on the scene he has little influence that he can bring to bear.

The late Carroll M. Pounders, M.D., was a graduate of Tulane University School of Medicine. In addition to his private practice in Oklahoma City, he was professor emeritus of clinical pediatrics at the University of Oklahoma School of Medicine.

Doctor Pounders was a Fellow of the American Academy of Allergy and the American College of Allergy, a member of the Southern Medical Association, the American College of Physicians, the American Academy of Pediatrics and the American College of Allergists.

With appropriate help and encouragement at least 80 per cent of the women will be able to nurse their babies. In all fairness I believe that there are some who really desire to breast feed their babies, but who for some physiological reason, cannot provide enough milk. It has been well established that purified growth hormone as well as crude anterior pituitary extract can definitely maintain the milk yield of lactating cows. This may afford a means of helping these people and it would seem that research on such a project might be as worth while as many of the others that are being carried on. It may be that they could be given enough help to enable them to carry out breast feeding successfully.

Now back to the ones that are to be brought up on the bottle. In order to grow as rapidly as they do they must take inordinate amounts of food, usually some form of cow's milk. If an adult should take proportionate amounts it would mean the ingestion of from two and one-half to five gallons daily. Of course the present day trend is to start many other foods during the first few weeks.

About 50 per cent of these bottle fed babies will get along with only a little trouble. They have either a natural or a readily acquired immunity to these foreign proteins. Another 35 or 40 per cent will have trouble during their early contact but will settle down after a few weeks and do reasonably well, apparently from an acquired immunity. They may be said to have three months' colic. We are left with about ten to 15 per cent who do not have the ability to establish lasting protection against repeated exposures to the antigens. They are the allergic ones who need help.

It should not be out of place here to recall the primary manifestations of allergy. They are: (1) smooth muscle spasm, (2) capillary dilatation and increased capillary permeability and (3) secretagogue effects upon various glands. The body systems that are usually involved are (1) the gastrointestinal tract, (2) the skin and (3) the respiratory tract.

The family history helps to pick out these cases. A definite history of allergy in one or both parents or in one or more siblings should always arouse our suspicion. The main symptoms of gastrointestinal allergy are (1) fetal hiccoughs (rare), (2) pain, (3) vomiting, (4) diarrhea, (5) constipation. We may have any number and combination of these symptoms but the most meaningful one is pain. This is the alarm gauge which does not allow us to ignore or neglect hidden trouble. The babies who cry for hours at a time and until far into the night, stopping from apparent exhaustion, are not doing so just for the exercise. They are truly uncomfortable.

Time will not be spent on the question of a differential diagnosis except to warn against overlooking such things as infections, especially otitis media. We should also watch for hypertrophic pyloric stenosis and painful hernia. Generally a family history of allergy with gradual onset at about one week of age of any one or more of the symptoms previously brought out will pretty well establish the diagnosis.

It is difficult to furnish relief by drugs because the response to antispasmodics and sedatives is far from satisfactory. In fact, the barbiturates make many of them more restless and excitable. Chloral hydrate does somewhat better than the barbiturates. Several proprietary preparations that combine scopolamine and phenobarbital are reasonably effective.

These babies should always be taken off cow's milk. The use of one of the milk substitutes will relieve many but not all of them and it will not insure that the relief will be lasting. It is perfectly possible for them to develop sensitivity to the milk substitute and for the symptoms to return. Fortunately there is a variety of substitutes available. Some babies are so universally sensitive that they will develop trouble from any single type of food that is given over a period of time. The best way to deal with this sort of situation is to alternate two or more formulas. The alternating or rotating must be by each feeding and not by the day. To repeat the same food two or more times in succession seems to increase the intensity of the allergic reactions. It is not uncommon for us to rotate three formulas such as a soybean mixture, a strained lamb preparation and a hydrolyzed casein mixture (Nutra-

migen). I do not mean to imply that this sort of program offers a perfect solution for all such troubles. I only wish it did. It will give satisfactory relief in a significant per cent of the cases and will bring about some improvement in nearly all of them. There will be instances when some of the rotating formulas will not be tolerated and will have to be discontinued but it is imperative to use at least two different ones. It is well to remember that the vitamin preparations also may cause trouble and these should be given only on alternate days.

Of the strained solid foods the vegetables are better tolerated and can be started at three months. They can be given once or twice daily but it is better to not give any one item more often than once every three days. Fruits rank second in tolerance and can be started in the same manner at four months with the cereals at five months. Of these rice and oatmeal are better tolerated than wheat. The meats can be added at six months. It is always better to work out a schedule that will allow each individual food one time every third day. One can begin to add cow's milk some time after six months. This is given on a trial basis and only one feeding a day is allowed. If it disagrees it must be withdrawn for the time being because its repetition will only intensify the symptoms. If it agrees then after four or five days a second feeding can be added and eventually a third. It is better never to go beyond three daily feedings of cow's milk.

Getting these children past this colicky, painful, restless stage does not mean that their feeding problems have ended. As they grow older some of them have recurrence from time to time of their abdominal pain. But there can be more insidious effects from their being allowed to partake regularly of the foods to which they are sensitive. I am sure that even if such a child were older, it would be very difficult for him to describe his subjective symptoms. He is apt to be hyperactive, restless, unstable, antagonistic, antisocial and pessimistic. Of more importance he is often unable to sleep well. Insomnia is a very important symptom of food allergy. The individual is not in pain but there is some sort of drive within him which prevents his being able to relax and to lie quietly in bed. He finds it necessary to fidget constantly, move his limbs and toss about. These children often get out of bed, wander over the house or seek to get into bed with the parents. All in all they seem to be motivated by a restless feeling of insecurity that is not well understood. They are not necessarily spoiled and punishment sems ineffective. I believe that many of these children will continue to be misunderstood by their parents and even by their doctors, but I hope there will be a gradual changing of this misunderstanding in the future.

From gastrointestinal allergy there is an easy transition to respiratory allergy which may begin during the first few months but more often it will be during the second year or even later and is seasonal at first. As children grow older these allergic troubles are apt to become more broadly based and to become more commonly recognized and treated. I have attempted to deal with these patients during what might be called the hazy dawn of their allergic troubles, a period through which they are apt to go unrecognized and untreated. □

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The Value of Echo-Encephalography in Acute and Chronic Head Injuries

AVERILL STOWELL, M.D.
JOHN E. KAUTH, M.D.

Echo-encephalography has proved of tremendous value in the quick diagnosis of subdural hematomas and surgical lesions following cerebral trauma.

A SERIES OF 184 cases of head injury with unconsciousness over three minutes was studied over a two and a half year period with specific reference to the use of echo-encephalography (SEG). The test was found valuable in determining the midline of the brain and in diagnosing subdural hematomas.

Twenty-one cases showed a midline shift. Of these, 12 had subdural hematomas and six had unilateral cerebral edema demonstrated by angiography or pneumoenchephalography. In this study the experimental error was small. No false negative scans were recorded, and only three false positives were found.

The first photograph (figure 1) shows the SEG from a man who had been unresponsive for 49 hours and who had intermittent dilatation of the right pupil. There was no shift. He was observed and subsequently recovered without neurological deficit.

The next photograph (figure 2) shows a slight shift in a patient who had had a mild head injury. He was admitted in a state of excellent response and subsequently became drowsy and restless on the second day. Because of the small amount of the shift, it was decided to watch him. Two days later he was quite responsive and the SEG was normal.

Another case of interest was an 18-year-old white girl who was admitted unconscious, responded in ten hours, but developed a right hemiparesis on the second day. The SEG was normal and no pneumoencephalogram or arteriogram was done. She made an uneventful recovery.

The next photograph (figure 3) shows a classical SEG of a large subdural hematoma. This 62-year-old white man was admitted because of headache and mild confusion. His past history revealed "nervous breakdown," and he had been treated six years for diabetes and tension states. Occasional intake of alcohol was recorded. In his routine work-up a tremendous shift was noted. Bi-

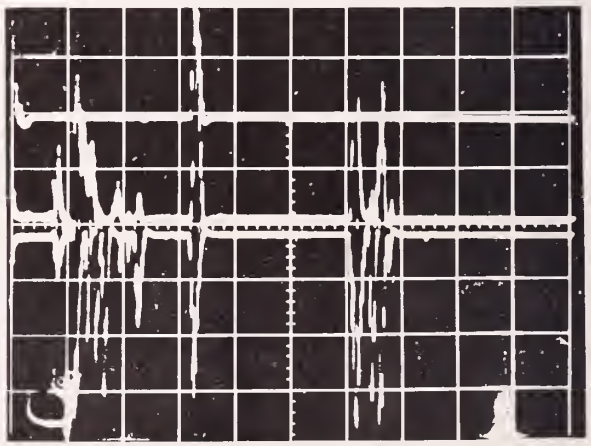


Figure 1.

From the Neurosurgical and Roentgenology Departments of Saint Francis Hospital, Tulsa, Oklahoma.
Presented at the Regional Meeting of the American College of Surgeons, September, 1966, Norman, Oklahoma.

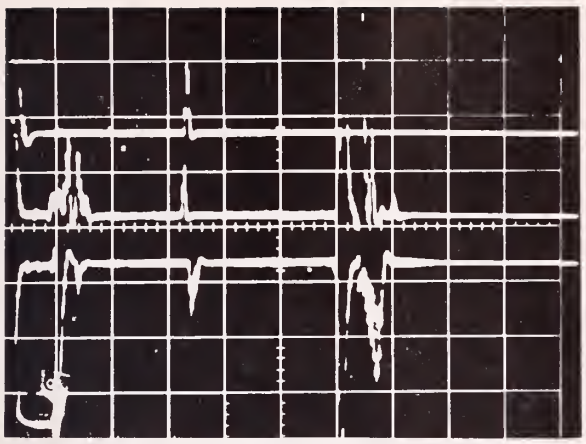


Figure 2.

lateral trephine holes for air study revealed a massive subdural hematoma. Craniotomy was done and subsequent SEG showed gradual return of the midline structures to their normal location.

All doctors who see cases of head trauma must determine as soon as possible the necessity of surgical interference for cerebral edema and subdural or intracerebral hematoma. The SEG has offered an excellent aid in evaluating unilateral lesions and in many cases by distorting the wave forms of the walls of the skull they have suggested bilateral clots. One is able to watch by serial echo-encephalography the increase or decrease in shift of the midline and to obtain information formerly unavailable without pneumoencephalography or angiography. We now feel safer in watching a patient a little longer if his SEG is normal.

The SEG is of great help in diagnosing unknown cases of coma that pass through the emergency room. A man is brought in unresponsive with no history. The sugar, blood urea nitrogen and CO_2 combining power are normal. The SEG shows a shift. The neurosurgeon is called that evening rather than in the morning.

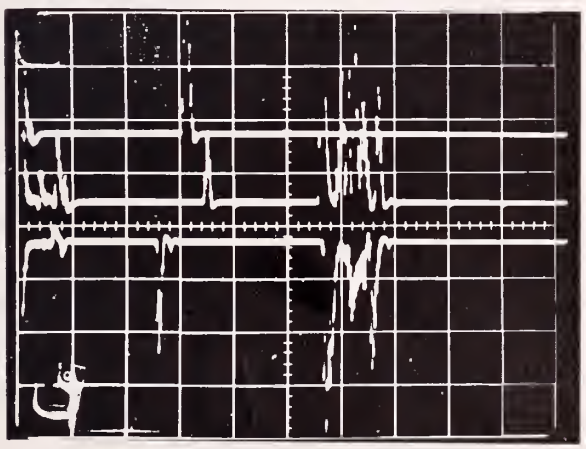


Figure 3.

Obtaining a good midline echo is relatively simple and we now use x-ray technicians entirely, who are taught the physical principles of ultra-sound waves. They are advised of the pitfalls of a thick skull, subgaleal hematomas and the occasional "onery" patient who does not have a proper obtainable midline (the so-called unsatisfactory SEG). With experience they learn to check and double-check the shifts, and to go over these cases with the attending roentgenologist. They become interested in watching the development of a shift in severe unilateral cerebral edema or subdural hematomas, and they are quick to report these changes. The machine can be used in the ward or in the radiology department.

There are, however, some definite "bugs" in all this, and in spite of recent refinements in equipment and training of personnel, there still remains the false positive, the false negative and the unsatisfactory record. Let us look for a moment at the statistics. Of the 184 cases of trauma, three showed a false positive, a shift that was not found by air study, and these were in cases of cerebral edema. We were lucky in this series and had no false negatives. One unsatisfactory recording was listed.

Averill Stowell, M.D., who graduated from Johns Hopkins University School of Medicine in 1938, limits his practice in Tulsa, to his specialty, neurosurgery. He is a member of the Harvey Cushing Society, the Congress of Neurological Surgeons, the American Association of Nervous and Mental Diseases and the American College of Surgeons.

John E. Kauth, M.D., a Tulsa physician, graduated from the University of Minnesota School of Medicine in 1954. He is certified by the American Board of Radiology. He is a member of the American College of Radiology and the Radiology Society of North America.

To determine the element of error, it was decided to examine 700 successive SEGs at Saint Francis Hospital in light of percentage reports in the literature of false negatives and positives up to ten per cent. In this series, 61 verified shifts were recorded, 18 being caused by operated brain tumors. One false negative report was found in a case of frontal lobe tumor with a mid-line shift determined by air study. Eleven false positive shifts were listed in cases of cerebral thrombosis, cerebral angiospasm, vertigo, and headache with four occurring in patients with brain atrophy. If a shift of two to three mm. however be considered normal as recommended by most observers, our 11 false positives would drop to five in the 700 cases. We do not believe the two to three mm. shift should be considered normal, since we have had one brain tumor with a 1.5 shift which was not suspected before the SEG, and one subdural hygroma in a child with a one mm. shift. We have had, however, one astrocytoma grade III with the SEG, arteriogram and the PEG normal, but the brain mercury scan and EEG showed a subsequently verified tumor. We suggest therefore, that any shift be recorded and the report read so that further diagnostic work-up may be indicated.

The so-called unsatisfactory SEGs are difficult to evaluate. There were six in our series, and two occurred in proven brain tumors. Early reports showed unsatisfactory echoes in several cases, 40 per cent of which were ultimately shown to have tumors. Grossman[4] reported two unsatisfactory recordings in 300 cases. In a similar series, Hansen[1] and Holmes[5] reported seven unsatisfactory cases. A large series from England[2] did not record the unsatisfactory results. Lithander in Sweden[3] reported eight of 373 as unsatisfactory. With further refinements and training of technicians, the percentage of these cases may be decreased.

Further development of the A scan for use in determining size of the ventricles, location and size of tumors is in progress. We are now making three recordings, one just anterior to the ear, and one three cm. anterior and one three cm. posterior to see if more useful information can be made available. For the general surgeon the A scan is useful in determining the anteroposterior diameter of the liver and full urinary bladder as well as the motion of cardiac valves. Compound B scan techniques localize abscesses, cysts, tumors, fibrous tissue in the uterus, breasts, heart, stomach, kidney and liver as well as localizing common ducts stones.[6]

In conclusion, we feel that the A scan, a simple and effective method of determining the location of the mid-line of the brain, is valuable in the treatment of cerebral trauma. It helps to solve the question of "Should we postpone surgery?" In our series of cerebral trauma, it was 98.4 per cent accurate, and in 700 consecutive cases it was accurate in 97 per cent. □

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OSMA NEWS RESUMES PUBLICATION

The association's monthly newsletter — "OSMA News" — resumed publication on September 1st and will continue through nine issues until May, 1968 when it will suspend once again during the summer months.

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Adults: 2 tsp. 5 times daily (20 mg.) or 2 tablets q.i.d.

*Based on 4 cc. per teaspoonful.

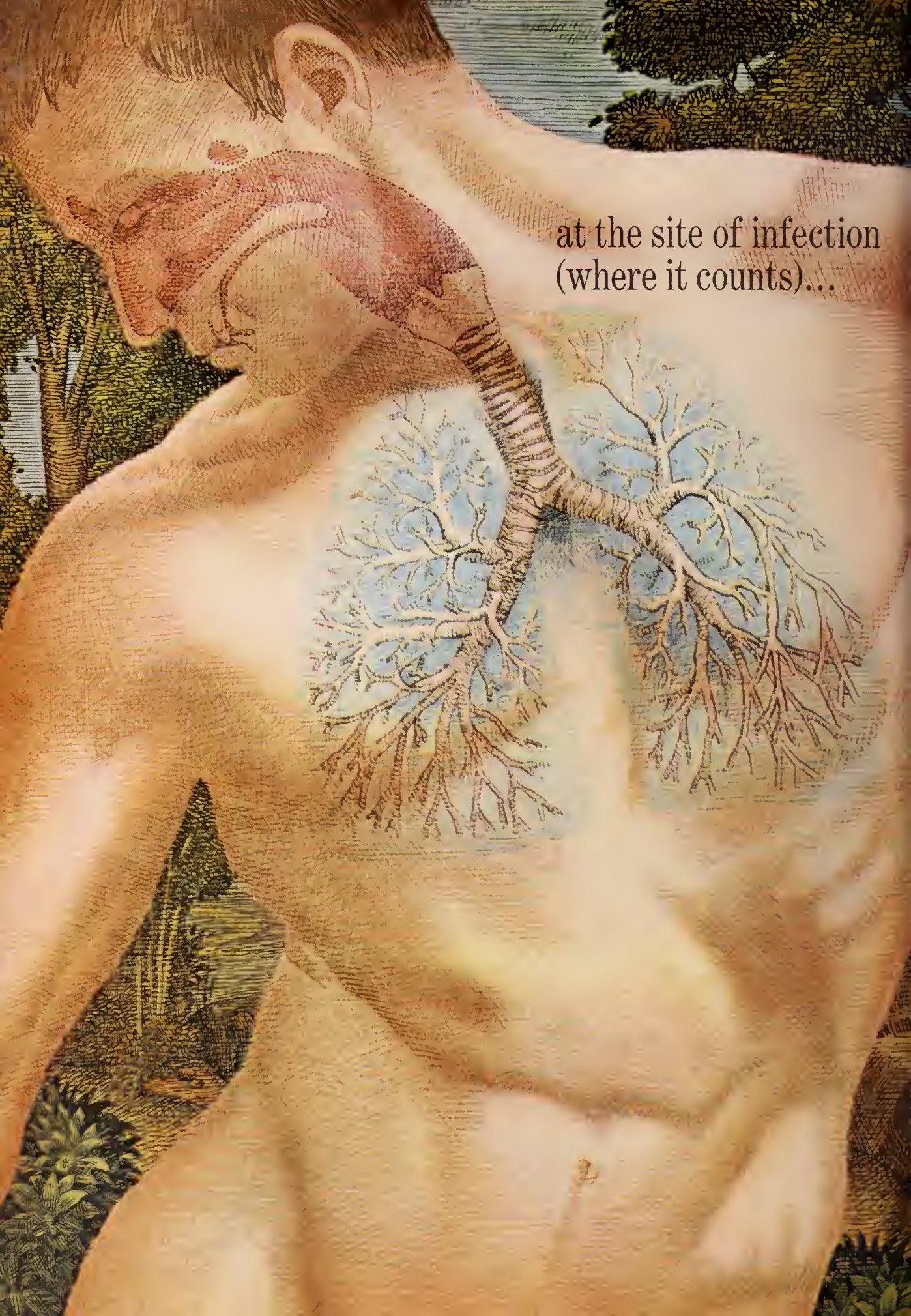
Maintenance dosage may be as low as one-fourth the initial daily dosage.

Precautions: Lomotil is a federally exempt narcotic preparation of very low addictive potential. Recommended dosages should not be exceeded, and medication should be kept out of reach of children. Should accidental overdosage occur signs may include severe respiratory depression, flushing, lethargy or coma, hypotonic reflexes, nystagmus, pinpoint pupils and tachycardia. Lomotil should be used with caution in patients with impaired liver function or those taking addicting drugs or barbiturates.

Side Effects: Side effects are relatively uncommon but among those reported are gastrointestinal irritation, sedation, dizziness, cutaneous manifestations, restlessness, insomnia, numbness of the extremities, headache, blurring of vision, swelling of the gums, euphoria, depression and general malaise.

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SEARLE *Research in the Service of Medicine*


at the site of infection
(where it counts)...

Ilosone® provides more antibacterial activity than any other oral erythromycin

Acid stable, better absorbed... Ilosone produces faster, higher, more prolonged blood levels, even in the presence of food[1-3]

Because it is the most active form of oral erythromycin, Ilosone can help assure consistently greater antibacterial activity at the site of infection. Ilosone produces peak antibacterial blood levels two to four times those of other erythromycin preparations.[1,2] Not only are these levels attained earlier, but they are maintained for much longer periods. Even the presence of food does not seem to affect the activity of Ilosone.[1,3]

In the treatment of patients with bacterial infections susceptible to erythromycin, Ilosone has compiled an excellent therapeutic record. Since it exerts its greatest activity against gram-positive organisms, it is particularly useful in common respiratory and soft-tissue bacterial infections. Ilosone kills—not merely inhibits—streptococci, pneumococci, and more strains of staphylococci than any other macrolide antibiotic. This bactericidal action, coupled with the high antibacterial levels attained, makes Ilosone especially valuable in patients with low host resistance, such as infants, debilitated individuals, and diabetics.

Ilosone has shown no cross-resistance with penicillin and may be effective against organisms that have become resistant to that agent. Despite its high antibacterial activity, Ilosone has demonstrated a low incidence of side reactions. Blood dyscrasias, ototoxicity, and tooth staining have not been observed. Infrequent cases of drug idiosyncrasy, manifested by a cholestatic jaundice, have occurred, but there have been no known definite residual effects.

Now available:
New! Ready-mixed Ilosone Liquid 125! (Contains erythromycin estolate equivalent to 125 mg. erythromycin base per 5-cc. teaspoonful.)

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Erythromycin Estolate

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Ilosone®/the most active oral form of erythromycin

Description: Ilosone is the most active form of oral erythromycin that has been developed. Because it is stable in acid, well absorbed, and excreted in lesser amounts in the bile, it provides faster, higher, and longer-lasting levels of antibacterial activity (ABA) in the serum, even when taken with food, than do comparable doses of erythromycin.

Indications: Ilosone is indicated in infections caused by microorganisms sensitive to its action (especially staphylococci, hemolytic streptococci, and pneumococci). The drug is therefore useful in a high proportion of bacterial diseases encountered in clinical practice and particularly in the treatment of bacterial infections of the upper and lower respiratory tract and soft tissues.

In the treatment of acute bacterial pharyngitis and tonsillitis, this antibiotic has promptly eradicated the bacteria (streptococci) and has produced a parallel prompt clinical improvement. There have been no group A beta-hemolytic streptococci resistant to this preparation. In beta-hemolytic streptococcus infections, treatment should be maintained for ten days to prevent the development of rheumatic fever or glomerulonephritis.

Erythromycin estolate has proved to be very effective in pneumococcus pneumonia and in acute bronchitis with pneumococci on culture. Bronchopneumonia and otitis media in children have responded well to its use.

The antibiotic has been used very successfully in staphylococcus infections. Good therapeutic results have been obtained in soft-tissue infections, abscesses, cellulitis, carbuncles, wound infections, and furunculosis.

In serious staphylococcus infections, erythromycin preparations should be used only in combination therapy with other antimicrobial agents. As is the case with any treatment regimen used in these severe conditions, surgical procedures should be performed when indicated, and large dosages of the antimicrobial agents should be employed. In this fashion, Ilosone has been effective in staphylococcus pneumonia, osteomyelitis, septicemia, empyema, and meningitis.

Multiple 500-mg. doses of the drug have also been useful in gonorrhea and syphilis. Since penicillin is the drug of choice for the treatment of syphilis and gonorrhea, erythromycin estolate should be employed for these infections only in patients with a history of penicillin allergy. Also, other infections due to susceptible bacteria in patients known to be hypersensitive to penicillin or other antibiotics may be considered for treatment with Ilosone.

Contraindications: Ilosone is contraindicated in patients with a known history of sensitivity to this drug and in those with preexisting liver disease or dysfunction.

Adverse Reactions: Data obtained from seven years' use of propionyl erythromycin ester and erythromycin estolate (Ilosone) indicate that hepatic dysfunction with or without clinical jaundice may occur during or following courses of therapy with the drug.

Changes in liver function tests in such cases have been indicative of intrahepatic cholestasis. The symptoms appear to be the result of a form of sensitization. The initial symptoms have developed in some cases after a few days of treatment but generally have followed one or two weeks of continuous therapy or several courses of the drug. Symptoms reappear promptly, usually within forty-eight hours, if the drug is readministered to sensitive patients. Eosinophilia was noted in peripheral blood counts. The findings readily subsided without apparent residual effects when treatment was discontinued. Recovery was delayed in one reported instance. The physician indicated in this case that either drug-induced jaundice or viral hepatitis may have been responsible for the findings.

In one clinical study involving ninety-three patients treated with the antibiotic, three cases of jaundice were observed and an additional eleven cases developed some changes in liver function tests. Three of the patients had abnormal liver function tests a second time on readministration of the drug.

Even though it is assumed that not all cases of jaundice have been reported, it seems clear that the number is small compared with the amount of drug that has been used. Reported cases have included persons in whom there had been administered other drugs known to be associated at times with hepatic side-effects and cases in which the presence of viral hepatitis or other disease may have been responsible for the findings. In some of the cases, associated gastro-intestinal symptoms simulated the colic of biliary tract disease. In other instances, clinical symptoms and results of liver function tests resembled findings in extrahepatic obstructive jaundice. It appears that the occurrence of jaundice after administration of Ilosone is infrequent, but further investigations are being made to estimate its incidence more accurately.

In those cases mentioned above in which jaundice appeared to be definitely related to use of the drug, laboratory findings were characterized by increased direct-reacting bilirubin, elevated alkaline phosphatase levels, negative or weakly positive cephalin flocculation and thymol turbidity tests, elevated serum glutamic oxalacetic transaminase levels, peripheral eosinophilia, and normal cholecystograms.

Individual idiosyncrasy seems evident since jaundice has not been reported in other patients taking prolonged courses of the medication. Patients with chronic infection have been given 1 to to 2 Gm. of the drug daily for periods of two to six months, and patients with rheumatic fever have taken prophylactic doses of 0.5 Gm. daily for two years without difficulty. In one group of 144 patients who received the drug daily for two years, no jaundice was noted. It was of interest that members of six of these patients' families, who were not taking the drug, had episodes of jaundice during the study period.

Transaminase and serum alkaline phosphatase levels were determined in a group of fifty-four adults and children who took 250 mg. of Ilosone daily for an average of sixteen months as rheumatic fever prophylaxis. The results were compared with those of a similar group of forty-four patients who received penicillin. There were no cases of jaundice in either group. Elevation of SGPT and serum alkaline phosphatase levels during the course of treatment was observed in one patient treated with Ilosone and in two patients treated with penicillin. Seven other patients in the group receiving Ilosone and four others in the penicillin group showed elevations in one of the tests at some time during administration of the drugs.

Very satisfactory therapeutic results, without toxicity, were reported in 102 pediatric patients who received short-term (ten-day) courses of Ilosone in the treatment of streptococcus infections. Results of liver function tests in these patients were comparable to those in a similar control group who had received penicillin.

Gastro-intestinal disturbances not associated with hepatic effects are observed in a small proportion of individuals as a result of a local stimulating effect of the medication on the alimentary tract; however, the normal intestinal gram-negative bacterial flora is not appreciably altered by erythromycin drugs.

Although allergic manifestations are uncommon with the use of erythromycin, there have been occasional reports of urticaria, skin eruptions, and, on rare occasions, anaphylaxis.

Administration and Dosage: Ilosone is administered orally.

Ilosone Pulvules®, Ilosone Liquid 125, Ilosone, 125, for Oral Suspension, Ilosone Drops, Ilosone Chewable Tablets.

For infants and for children under twenty-five pounds of body weight, the usual dosage is 5 mg. per pound every six hours; for children twenty-five to fifty pounds, 125 mg. every six hours. (Tablets Ilosone Chewable should be chewed or crushed and swallowed with water.)

For adults and for children over fifty pounds, the usual dosage of Ilosone is 250 mg. every six hours.

For severe infections, these dosages may be doubled.

When larger doses are indicated, parenteral erythromycin therapy should be considered.

In the treatment of syphilis, the recommended total dosage is 20 to 30 Gm. given in divided doses for a period of ten to fifteen days. Close follow-up of the patient is necessary since erythromycin drugs have not had adequate evaluation in all stages of syphilis. Examinations of spinal fluid are recommended as part of the follow-up therapy.

For gonorrhea, 500 mg. four times a day for four days are recommended. In the treatment of gonorrhea, patients with a suspected lesion of syphilis should have a dark-field examination before receiving antibiotics, and monthly serologic tests should be made for a period of three months.

How Supplied: Pulvules Ilosone, Capsules, N.F., 125 and 250 mg (equivalent to base), in bottles of 24 and 100.

Ilosone Liquid 125, Oral Suspension, U.S.P., 125 mg. (equivalent to base) per 5-cc. teaspoonful, in 60-cc. and pint-size packages.

Ilosone, 125, for Oral Suspension, N.F., 125 mg. (equivalent to base) per 5-cc. teaspoonful, in 60 and 150-cc.-size packages.

Ilosone Drops, 5 mg. (equivalent to base) per drop, in 10-cc.-size packages, with dropper calibrated at 25 and 50 mg.

Tablets Ilosone Chewable, N.F., 125 mg. (equivalent to base) in bottles of 50. [032767

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Additional information available to physicians upon request.
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Carcinoma of the Cervix Complicating Pregnancy

JOSEPH W. KELSO, M.D.
JOSEPH W. FUNNELL, M.D.

With proper cancer surgery followed by radiation, regardless of stage of pregnancy, carcinoma of the cervix complicating pregnancy no longer presages death of the patient.

TRADITIONALLY, it has been held that pregnancy has an adverse effect on patients afflicted with invasive carcinoma of the cervix. It is our contention that this concept has no basis in fact and that there is no evidence that pregnancy alters the biological behavior of the tumor or creates a more favorable environment for its growth.

We further contend that if patients receive adequate prenatal care, if a definitive diagnosis is made as soon as there is clinical evidence of cervical disease, and if proposed treatment is instituted immediately after the diagnosis is confirmed, the results as measured in five-year survival rates will be as good for the gestational patient as for her non-pregnant sisters.

We fully realize that previously reported studies do not support our point of view. Holzaepfel and Ezell[1] reported 23 cases of Stages I and II with a 52 per cent five-year survival. Jones and Osband[2] have reported 61.5 per cent survival in 13 cases of International Stages I and II carcinoma of the cervix complicating pregnancy treated by radium and x-ray. Some of these cases had been managed only a few months before the report. McGee and Sala[3] report only a single survivor among their five patients treated by irradiation and she had not reached her second year of survival. We feel, however, that the excellence of results in our series of 12 patients with International Stage I and Stage II carcinoma of the cervix complicating pregnancy which we report will support our position and lead to the conclusion that the mode of treatment may be the determining factor in ultimate survival.

INCIDENCE

There is no satisfactory way to estimate the incidence of carcinoma of the cervix complicating pregnancy. From a survey of the world literature, however, one can conclude that it is somewhere in the neighborhood of .04 to .05 per cent, or one in four or five thousand pregnancies. Actually the incidence itself is of no great importance so long as the physicians caring for pregnant women are cognizant of this disease, have a high index of suspicion, and, when signs and symptoms of cervical pathology occur, make every effort to arrive at a definite diagnosis.

SIGNS AND SYMPTOMS

The patient with early carcinoma of the cervix is usually asymptomatic except for vaginal bleeding. The bleeding is only slight

at first and is frequently noted only after coitus or douching. It may be preceded or accompanied by a malodorous vaginal discharge because of secondary infection of the cervical lesion.

In each of our 12 patients, vaginal bleeding was the abnormality which led to the diagnosis of invasive carcinoma of the cervix.

In its earliest stages, invasive carcinoma of the cervix may be entirely asymptomatic and the first suggestion of the disease may be a positive cervical cytology.

DIAGNOSIS

The definitive diagnosis of invasive carcinoma of the cervix during pregnancy is made from specimens obtained by biopsy or cold-knife conization of the cervix. The diagnosis on which treatment is based is never made from abnormal cervical cytologies alone. Biopsies are performed when a demonstrable lesion is present. A cold-knife conization is used in the absence of a visible lesion when positive cytologies have been obtained.

REQUISITES, ETC.

In order that this lesion will never be overlooked, all prenatal patients on their first visit, regardless of age, should have a complete physical examination including visualization of the cervix and the preparation of Papanicolaou smears. Any abnormalities which are discovered should be investigated immediately, regardless of the duration of gestation. If, despite normal findings on the first prenatal visit, the patient should develop vaginal bleeding during the remainder of her prenatal course, a complete examination including visualization of the cervix and additional Papanicolaou smears is again mandatory.

We emphasize this point because we feel that there is a wide-spread misconception that patients who bleed during pregnancy must not be examined lest the pregnancy be disturbed. Not only is this untrue but ignoring vaginal bleeding or attributing it to a pregnancy complication—be it postcoital spotting or massive hemorrhaging—may allow cancer of the cervix to progress beyond hope of cure.

Should these diagnostic procedures reveal invasive carcinoma of the cervix, immediate treatment of this disease is instituted regardless of the stage of gestation.

MANAGEMENT

Our management of invasive carcinoma of the cervix may be divided into pre-treatment evaluation and definitive therapy.

Pre-treatment evaluation includes, first, the clinical staging of the lesion according to international classification of carcinoma of the cervix. The patient next is thoroughly examined physically, radiologically, and chemically to determine if there is unsuspected metastatic spread of the disease. The possibility of invasion to adjacent structures is evaluated by proctoscopic and cystoscopic examinations. Anemia is corrected by adequate blood replacement and infection is treated by appropriate antibacterial therapy. Finally, the patient's status as a surgical candidate is judged.

Joseph W. Kelso, M.D., a 1925 graduate of the University of Iowa College of Medicine, has been certified by the American Board of Obstetrics and Gynecology. In addition to his private practice, Doctor Kelso is Professor of Gynecology at the University of Oklahoma School of Medicine. He is a Fellow of the American College of Surgeons and the American College of Obstetricians and Gynecologists, a member of the Southern Medical Association, the Central Association of Obstetricians and Gynecologists and the Pan-Pacific Surgical Association.

Joseph W. Funnell, M.D., graduated from the University of Oklahoma School of Medicine where he is presently Assistant Clinical Professor of Gynecology and Obstetrics. He is certified by the American Board of Obstetrics and Gynecology. Doctor Funnell is a Fellow of the American College of Surgeons and the American College of Obstetricians and Gynecologists, a member of the Southern Medical Association, the Central Association of Obstetricians and Gynecologists and the American Society for Study of Sterility.

CARCINOMA OF THE CERVIX COMPLICATING PREGNANCY
12 Cases 6.1%
December 1, 1945 - December 1, 1960

Patient	Age	Wt.	Date Operated	Int'l Classif.	State of Pregnancy	Condition
M. A.	40	140	12-1-45	I	6 wks. preg.	A&W 3-1-64
M. H.	28	191	2-22-47	I	2 wks. pp	A&W 2-1-62
P. W.	37	110	10-16-47	II	6 wks. pp	A&W 3-1-64
P. G.	40	119	1-5-49	I	8 wks. pp	A&W 3-1-64
E. G.	30	176	2-27-52	II	4 wks. pp	A&W 3-12-64
J. D.	31	212	8-16-52	I	8 wks. p.ab.	A&W 3-28-63
L. D.	33	160	12-29-53	I	10 wks. preg.	A&W 3-1-64
N. W.	24	100	6-9-54	I	8 wks. pp	A&W 3-1-64
A. Mcl.	26	125	2-19-55	II	8 wks. preg.	A&W 1-5-62
L. B.	35	113	6-1-56	I	Diag. 32 wks. preg. Del. by C. S.	A&W 11-11-63
L. H.	37	141	9-24-58	II	5 mos. preg.	A&W 11-21-63
R. S.	48	145	1-27-59	I	inc. ab. hydat. mole	A&W 3-1-64

In all suitable candidates, definitive therapy is then instituted. This treatment consists of an extended radical Wertheim hysterectomy, bilateral salpingo-oophorectomy, removal of the upper one-third or one-half of the vagina, (depending upon extent of involvement) a bilateral pelvic lymphadenectomy, and excision of all parametrial tissue from pelvic wall to pelvic wall *enbloc*.

As soon as the patient has recovered from her surgery adequately—usually three to four weeks—whole pelvic radiation is administered.

CASES TREATED AND RESULTS

In private and clinical practice in the years covered in this report (December 1, 1945 to December 1, 1960), we have encountered 12 cases of invasive carcinoma of the cervix during pregnancy or in the immediate postpartum period who are now beyond the fifth anniversary of their treatment. This group consisted of eight International Stage I and four International Stage II invasive carcinomas of the cervix. All cases were treated as we have outlined.

Our treatment, measured in five-year survival rate, is 100 per cent, with all patients surviving, including the first patient who was treated twenty and one-half years ago. Figure I details the patients in this report.

CONCLUSION

The management of every obstetrical patient requires that her attending physician maintain a high index of suspicion for invasive carcinoma of the cervix. Although the incidence is low, successful treatment depends on early diagnosis and the institution of proper treatment. Of utmost importance is adequate prenatal care, including routine cervical cytology and investigation of any abnormal bleeding during pregnancy. If initial evaluation or investigation of abnormal bleeding reveals cervical pathology or abnormalities of the Papanicolaou smear, tissue diagnosis is made by biopsy or cold-knife conization of the cervix. In the patient with invasive carcinoma of the cervix, definitive treatment is instituted regardless of the stage of gestation.

Our recommended treatment is a combination of radical surgery followed by whole pelvic irradiation.

In 12 cases treated by this regimen, our 100 per cent five-year survival rate leads us to conclude that this is the treatment of choice for invasive carcinoma of the cervix International Stage I or Stage II.

It is our final conclusion that pregnancy does not have an adverse effect on patients with invasive carcinoma of the cervix who are treated by the method outlined in this report. □

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1211 North Shartel, Oklahoma City, Oklahoma

Oral Progestin Therapy for Metastatic Adenocarcinoma of the Endometrium

TONY G. PUCKETT, M.D.*
JAMES A. MERRILL, M.D.

Objective response and disappearance of metastatic adenocarcinoma of the endometrium has been obtained with a new oral progestin. A subjective response of improved over-all well being and appetite occurred in 70 per cent of the patients. The lack of side effects makes this an advantageous method of treating otherwise incurable adenocarcinoma of the endometrium.

SINCE KELLEY[12] in 1951 reported a favorable response of metastatic adenocarcinoma of the endometrium to progesterone therapy there have been confirmatory reports[2, 4, 10, 22, 31] of the effectiveness of progestins in the treatment of this disease. The results of these reports will be summarized and our experience with a new progesterone derivative, medrogestone, will be presented.

The etiology of adenocarcinoma of the endometrium is unknown. However, the occurrence of adenocarcinoma of the endometrium is more frequent in certain patients, who have in common endocrine abnormalities associated with anovulation and unopposed estrogen activity. These patient types include the hypertensive, obese, diabetic; patients with abnormal menstruation in adolescence; and amenorrheic or oligomenorrheic patients including those with polycystic ovarian syndrome.

Hertig and Sommers have shown that adenocarcinoma of the endometrium is frequently preceded by adenomatous hyperplasia and anaplasia (three to six years). The same appears true for *in situ* adenocarcinoma which is "often followed by or accompanies definite adenocarcinoma."[5] Gusberg in a prospective study of postmenopausal patients with adenomatous hyperplasia found a 12 per cent incidence of adenocarcinoma of the endometrium in five years.

Kistner[18] reporting on the use of chlorotrianisene for the inhibition of ovulation in 44 women, ages 20 to 30, observed endometrial hyperplasia in 15 and anaplasia in four. With cessation of therapy and resumption of ovulation the endometrium reverted to normal histology. Endometrial hyperplasia and adenocarcinoma of the endometrium have been produced in experimental animals with continuous estrogen administration.[23, 32] When progesterone is given concurrently adenocarcinoma does not develop.[32]

Southam prospectively followed 291 adolescents with menstrual abnormalities and 19 subsequently developed adenomatous hyperplasia and four adenocarcinoma (ages 23, 29, 30, and 33).

Jackson and Dockerty, and Speert have reported 19 per cent and 25 per cent incidence of adenocarcinoma of the endometrium in patients with the polycystic ovarian

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syndrome. Kistner[15, 20] reports that hyperplasia of the endometrium reverts to secretory endometrium with production of ovulation. Kaufman reported reversal of endometrial hyperplasia following wedge resection of ovaries of patients with polycystic ovarian disease. Steiner, *et al.*, and Kistner[16] reported reversal of endometrial hyperplasia and carcinoma *in situ* resulting in glandular atrophy and decidual change of the stroma in 66 per cent of the patients treated with progestins.

The extensive use of progestins for conception control and treatment of endometriosis has revealed endomentrial glandular atrophy as a frequent histologic change.

Such observations have suggested the rationale for the use of these steroids in treating endometrial neoplasia.

The reported experience with the use of progestins in recurrent or metastatic adenocarcinoma of the endometrium has been encouraging.[21, 24, 30] Kelley and Baker[13] treated 22 cases of advanced malignancy with hydroxyprogesterone caproate in doses ranging from 150 to 1000 mgm./week. There was objective regression of the tumor in seven patients lasting six months to four and one-half years. Kennedy reported similar response in eight of 22 patients treated with the same progestin. The report of the compilation of 431 patients treated by 88 investigators indicated a 30 per cent objective response of the tumor.[3] Objective response has been defined as reduction of 30 per cent or more in the size of lesions. Using newer progestins recent reports indicate 30 to 40 per cent objective response. Wentz used dimethisterone in three groups of patients; endometrial hyperplasia, adenocarcinoma and recurrent adenocarcinoma of the endometrium. All patients with hyperplasia had normal endometrium following therapy. Of four patients with primary adenocarcinoma treated with intracavitary dimethisterone, one had residual tumor at the time of surgery. The others were free of tumor. All patients with recurrent adenocarcinoma demonstrated regression for one to 16 months. Medroxyprogesterone has been reported by Smith, Anderson and Kistner[19] to produce objective response in 30 to 40 per cent of patients treated with survivals to 42 months.

In the present study we have used medrogestone or Colprone.* This compound is active orally and equal to medroxyprogesterone in progestational potency. In animal studies it has no estrogenic properties. In contrast to medroxyprogesterone, medrogestone is not androgenic, does not suppress adrenal weight, and has only slight corticoid properties. Smith reports adrenal suppression in all patients treated with medroxyprogesterone for six weeks with 250 mgm./week. Whereas all progestins demonstrate anesthetic qualities in animal toxicity studies, medrogestone does not produce anesthesia even when administered in a dose 15 times the anesthetic dose of 17 hydroxyprogesterone caproate.

Unlike many cancer chemotherapeutic agents there are essentially no side effects with progesterone derivatives. With medrogestone, we have seen no edema, thrombophlebitis, nausea, or vomiting. Oral administration is a most suitable method for both in-patients and out-patients.

The following case reports illustrate the effectiveness of medrogestone in treatment of metastatic recurrent adenocarcinoma of the endometrium.

1. (MAS) A 62-year-old woman presented with recurrent adenocarcinoma of the endometrium. Primary surgery had been performed three years previously. Examination revealed five discrete vaginal lesions, one to two cms. in diameter and a left supraclavicular mass. Severe back pain was the major complaint (figure 1). Biopsy of both areas revealed adenocarcinoma and x-rays revealed spondylitis. Treatment with medrogestone 40 mgm./day was started. Within three weeks some progestational effect was evident microscopically. The back pain im-

*Supplied by Ayerst Pharmaceuticals.

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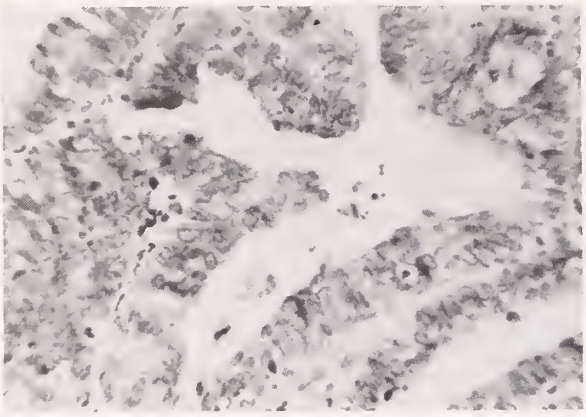


Figure 1. Case No. 1. Initial biopsy of vaginal lesion.

proved. Four months after initiation of therapy a mass was again evident in the left supraclavicular area. Medrogestone was increased to 400 mgm./day (figure 2). A vaginal biopsy revealed degeneration and pyknosis of tumor cells. Under direct visualization the vaginal lesions slowly disappeared leaving the vagina normal in appearance. The supraclavicular mass disappeared. The patient is alive after 21 months of therapy.

2. (MS) A 62-year-old woman was treated in 1960 for squamous cell carcinoma of the vulva. One inguinal node contained metastatic tumor. In 1954 she was treated by radium and surgery for adenocarcinoma of the endometrium. Nineteen months later a four by four cm. retroperitoneal, perirectal mass of metastatic adenocarcinoma was removed. A perirectal mass recurred, and medrogestone 400 mgms./day was given. When the patient was last seen the mass was

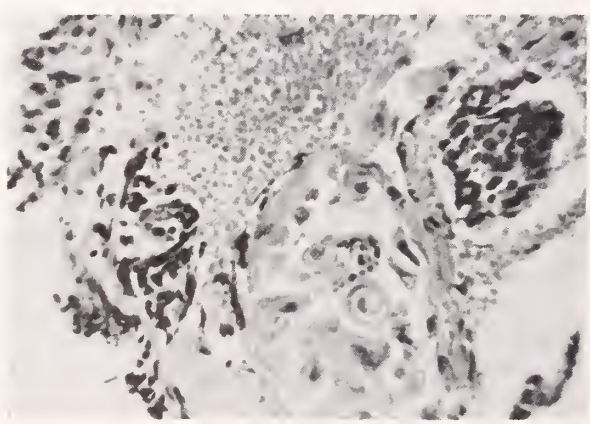


Figure 2. Case No. 1 Biopsy of vaginal lesion after initiation of treatment. Note the degeneration and pyknosis.



Figure 3. Case No. 4. Original appearance of skin lesions of right lower abdomen.

one-third the original size and the patient was asymptomatic ten months after the initiation of therapy. Following her last visit she experienced a cerebrovascular accident and was transferred to a nursing home. She did not return for further treatment and expired two months after cessation of medrogestone therapy of unknown cause.

3. (VZ) A 67-year-old woman was treated with x-ray and surgery for adenocarcinoma of the endometrium in February 1965. Six months later a vaginal metastasis was locally excised and medrogestone 100 mgms./day was given for four months. After medrogestone was stopped a second vaginal lesion appeared and was biopsied. Medrogestone was again started at 400 mgms./day and she is now alive and without recurrence.

4. (BJK) A 57-year-old woman was referred for treatment of persistent herpes zoster of six months duration. Biopsy revealed metastatic adenocarcinoma. She had previously been treated for adenocarcinoma

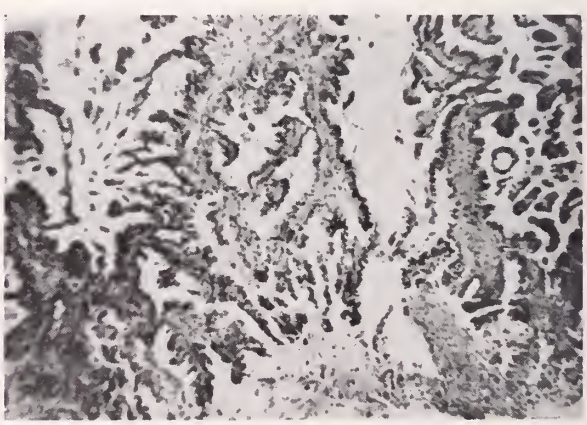


Figure 4. Case No. 4. Bladder biopsy showing metastatic adenocarcinoma prior to therapy.



Figure 5. Case No. 4. Subsequent vesicular appearance of lesions after six weeks of therapy.



Figure 7. Case No. 4. Almost complete disappearance of abdominal skin lesions with residual tanning.

of the endometrium by radium and surgery (figure 3). There was a raised, scaly, erythematous rash covering the lower abdomen, right breast, flank and upper thigh. Vulvar and vaginal edema was present (figure 4). Bladder biopsy revealed metastatic adenocarcinoma. The patient complained of moderate pain and marked pruritis. Medrogestone 400 mgms./day was begun (figure 5). The lesions of the abdomen, breast and right thigh became more vesicular with weeping and gradual disappearance (figure 6). Microscopically, the tumor cells became vacuolated and there were foci of necrosis. Marked symptomatic improvement occurred (figure 7). The initial abdominal lesions regressed. The vulvar and vaginal edema decreased, but the leg lesions appeared and progressed. The patient expired nine months after initiation of therapy.

Three patients each presented with dyspnea and diffuse pulmonary metastasis following treatment for adenocarcinoma three, five and six years previously.

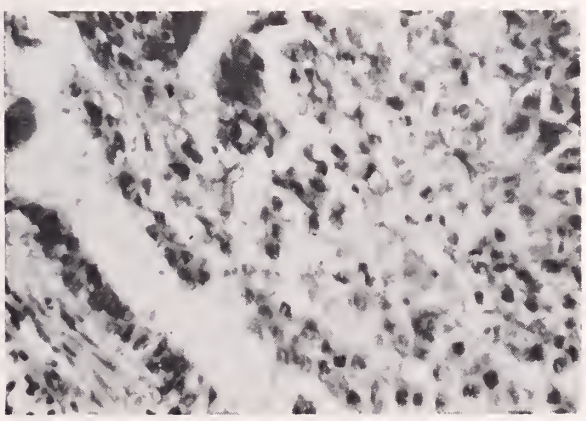


Figure 6. Case No. 4. Skin biopsy after six weeks of medrogestone therapy. Tumor cells show vacuolation and necrosis.

5. (JY) A 58-year-old female was initially treated with radium and external therapy for squamous cell carcinoma of the cervix and endometrial adenocarcinoma. Three years later medrogestone 75 mgms./day was started after a negative D & C and cervical biopsies. Her dyspnea and cough resolved. She resumed her housework and gardening. No changes occurred in her chest x-ray and the dosage was increased to 400 mgms./day. The patient subsequently developed nausea and ataxia. Craniotomy revealed a single left cerebellar lesion of metastatic adenocarcinoma showing mild progestational effect. She expired three hours post operative.

6. (SSR) A 52-year-old woman previously treated by primary surgery had lumbar metastasis in addition to the pulmonary metastasis. Initial therapy was hydroxyprogesterone caproate 500 mgms./week. A productive cough developed with cavitation on x-ray. Therapy was stopped and a tuberculosis work up was negative. Medrogestone 60 mgms./day was started two months later. The pulmonary infiltrate decreased, but the lumbar metastasis progressed with collapse of vertebrae. She expired 11 months after the start of progestin therapy.

7. (JLS) A 60-year-old woman treated by surgery and postoperative radiation was started on medrogestone 60 mgms./day. Her dyspnea improved; however, she expired three months later.

Three cases demonstrated no response to medrogestone. Each had pelvic recurrence five, nine and ten months after initial ther-

apy. Two of these patients expired within six weeks of initiation of therapy. The third patient expired after four months with diffuse tumor. There was minimal, if any, progestational effect microscopically.

DISCUSSION

Of ten patients treated six weeks to 25 months, four have demonstrated objective response to medrogestone. Two of these are alive without evidence of recurrence 18 and 25 months later. Two have demonstrated an objective response without complete resolution. Three patients with pulmonary lesions experienced symptomatic improvement for four to 11 months. Three patients expired without improvement.

One patient demonstrated disappearence of skin metastases in areas with the simultaneous appearance of new skin metastases in other areas. Others also have noted that tumor may regress or disappear in one area and simultaneously increase in another metastatic site.[1,14] This was very striking in our patient with skin metastases. Some of these completely disappeared with areas of tanning remaining. Such a differential growth pattern continued until her death. We have no explanation of this occurrence, which may represent tumor mutation or adaptation. Kistner[19] and Wentz report necrosis of endometrial adenocarcinoma after intracavitary injection of progestins and postulate a retained genetic responsiveness of these cells to progesterone. We could demonstrate no histologic evidence of increased influence upon skin metastases following topical soaks of medrogestone applied directly to the skin lesions.

Forty per cent of our patients demonstrated objective response. Subjective response was indicated by history and cessation of the need for pain medication. Seventy per cent of the patients noted moderate to marked improvement in symptoms, appetite and energy. Many authors have commented upon the feeling of general well being that patients experience when receiving progestational agents. Our patients had similar sustained mood elevation.

There appears to be no clear indication of predictable response based on the initial histology, mode of original therapy, duration of time to recurrence or histology of the metastatic lesion. We have demonstrated a histologic change in metastatic lesions following medrogestone.

The value of pre- and post-operative administration of progestins is uncertain at the present. Kistner,[18] Wentz and Sherman have noted regression of uterine size, cessation of bleeding and less inflammation when progestins are used pre-operatively.

SUMMARY

In patients with metastatic adenocarcinoma of the endometrium, objective response to medrogestone has been obtained in 40 per cent, a figure comparable to those reported with other progestins. The ease of administration and total lack of side effects merits consideration of medrogestone for the treatment of recurrent adenocarcinoma of the endometrium. □

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ABSTRACT

MAN'S MIND AND HIS CIRCULATORY SYSTEM

Although recognition has long been given to automatic functions in regulating the cardiovascular system, it has been only rather recently that any consideration has been accorded the role of the cerebral cortex in this continuous play of counteracting forces. The implications of easily recognizable responses by the circulatory system to purely emotional functions such as embarrassment passed largely unnoticed. Only rarely do such responses appear to be under volitional control although one subject has been reported to be able to induce temporary cardiac arrest at will.

The diving reflex, that which causes bradycardia and peripheral arterial constriction when the face is immersed in water, has been recently studied as a basic pathway by which cardiac arrest may be induced by excessive or paranormal stimulation.

Other investigators have studied the effects of threatening or stressful events upon such measurements of cardiac performace as rate, rhythm, and output, and have found that significant changes may occur under these circumstances. Similarly, changes in the T-waves and S-T segments of the electrocardiogram have been observed. The mechanisms by which these alterations come about are presently unknown, and even their potential significance with respect to the health of the individual is uncertain, but they are clearly in operation.

The role of cholesterol and other lipids in the blood has been the subject of a vast number of studies, especially with respect to their importance in the development of arteriosclerosis and coronary artery disease. During periods of inanition, the body conserves its glucose stores for consumption by the nervous system which cannot metabolize other sources of energy. Muscle, however, can shift to a fat-burning pathway and utilize the lipids as energy sources. It may thus be inferred that elevations of cholesterol are not always deleterious. Investigators closely following the lives of subjects who had suffered myocardial infarctions were able to show that significantly stressful situations in the lives of these persons was accompanied by a transient rise in serum cholesterol concentration of approximately 15 per cent. This seems to supplement the observations of others that there is a "personality type" for persons subject to coronary atherosclerosis.

Reviewer's Note: For some time now, man has set great store by the notion that his convoluting cortices are the anatomical site of his superiority over other animals. Despite this fundamental belief in this brain which has enabled him to change his whole environment and to begin the exploration of space, he has been strangely unwilling to accept the idea that this same brain is capable of altering the milieu of its own organism. Only now have we begun the systematic study of this physiology.

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Cholesterol or Not

JOHN D. KYRIACOPOULOS, M.D.*

Within the past two decades, evidence has accumulated pointing to the fact that there has been an increase in the frequency of coronary heart disease (CHD). Furthermore, an equally important observation has been the increasing tendency of the disorder to occur among subjects of younger age, particularly men.

There has long been a need for the early detection and prevention of the disease, which alone is responsible for more deaths in the United States than any other disease. Longitudinal studies, conducted in this country and abroad, have identified several factors in association with coronary atherosclerosis. Major among these are hypertension, elevated blood cholesterol and left ventricular hypertrophy, whereas increased body weight, reduced vital capacity, cigarette smoking, physical inactivity, etc., are currently considered less important attributes. Most of these factors have been accepted as being in some way related to CHD and probably no expert in the field would challenge the generous contribution of hypertension to the development of the disease. Many workers however, would not agree that the place of cholesterol in the production of coronary heart disease has been definitely established.

Data derived from prospective epidemiological studies are controversial with regard to cholesterol. The results of the Framingham[1,2] and Los Angeles[3] studies, as well as others, show a high degree of association between cholesterol and CHD. In the Los Angeles heart study, the rate of *de novo* myocardial infarction among healthy civil employees adjusted for age, was 17.0 for cholesterol levels of 210 mgs%, 46.2 for 210-269 mgs%, reaching a high of 76.9 when serum cholesterol ranged between 270-389 mgs%. Moreover, high blood pressure appeared to exert no influence on the rate, at cholesterol levels of 270 mgs% or less and only a weak one at higher levels. In the Framingham study, the correlation is equally impressive particularly in younger ages, where the power of cholesterol in depicting the coronary prone individual was noted. The Tecumseh[4] study, on the other hand, failed to show any difference in the occurrence of CHD among subjects of different age with wide variation in their serum cholesterol levels. Additional observations brought into focus that the affiliation of serum cholesterol and coronary atherosclerosis varies among people of different ethnic backgrounds. Thus, Epstein[5] found no association between cholesterol and CHD in a group of clothing workers of Jew-

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ish origin. In contrast among their matched cohorts of Italian ancestry, the association was evident. On the other hand, the Jews from Yemen that immigrated to Israel where their diet became rich in fats and their cholesterol rose, experienced significantly higher CHD.[6]

A point that all studies have uniformly failed to establish, is the level of cholesterol beyond which the individual becomes vulnerable to the disorder. Paul[7] in his study of CHD among electric company workers found that 30 per cent of new cases occurred in subjects in the low cholesterol range. Doyle[8] in the Albany study observed that the rate of new cases was the same for cholesterol values from less than 200 mgs% to 275 mgs%. He felt that in the individual subject no prognostic value could be attached to the blood cholesterol. Furthermore, in countries where the frequency of CHD is low, the disease develops at lower levels of blood cholesterol than, for example, in the United States where atherosclerosis is more prevalent.

Carefully controlled studies have now confirmed that reduction of serum cholesterol provides no protection against atherosclerotic coronary disease. The Trappist Monks who subsist on vegetable diet have much lower serum cholesterol than the Benedictine Monks who eat ordinary diet. Yet, the incidence of CHD in the two groups is not different.[9] Rose, *et al.*,[10] randomized their patients into three groups. One group served as a control and received an ordinary diet, whereas the patients in the other two groups received either olive oil or corn oil, as the only dietary fat. At the end of the study, the blood cholesterol of the corn oil-fed group was significantly lower than in the other two. In spite of the lower blood cholesterol the mortality rate in this group was higher. They concluded that dietary regimens focused on lowering cholesterol were unwarranted. In a similar fashion, male patients surviving their first myocardial infarction were assigned to 40.0 gms. low-fat diet or ordinary diet. Again, the rate of relapse in both groups was identical although the cholesterol level had fallen significantly in the low fat diet group.[11]

Finally, the association between cholesterol and CHD can be studied directly at the tissue level in persons whose blood lipids had been known during life. Patterson[12] and associates conducted such a study in psychotic, institutionalized patients 60 to 69 years of age in whom multiple determinations of blood cholesterol and other lipid parameters had been obtained for several years prior to death. They found no correlation between the degree of coronary arteriosclerosis and blood levels of cholesterol during life. These results are in agreement with conclusions reached by Gofman,[1] from the Framingham study, wherein he demonstrated that cholesterol loses its segregation power beyond the age of 55.

In summary, the evidence linking serum cholesterol to CHD is at best controversial. Coronary artery disease occurs over a wide range of blood cholesterol levels and its incidence parallels the level of cholesterol regardless of initial values. Cholesterol probably has a predictive power among men of younger age subject to coronary atherosclerosis. Beyond the fifth decade, cholesterol and CHD are unrelated. Lowering the cholesterol level in the blood affords no protection against CHD; therefore, dietary and therapeutic regimens to accomplish this change are not justified. □

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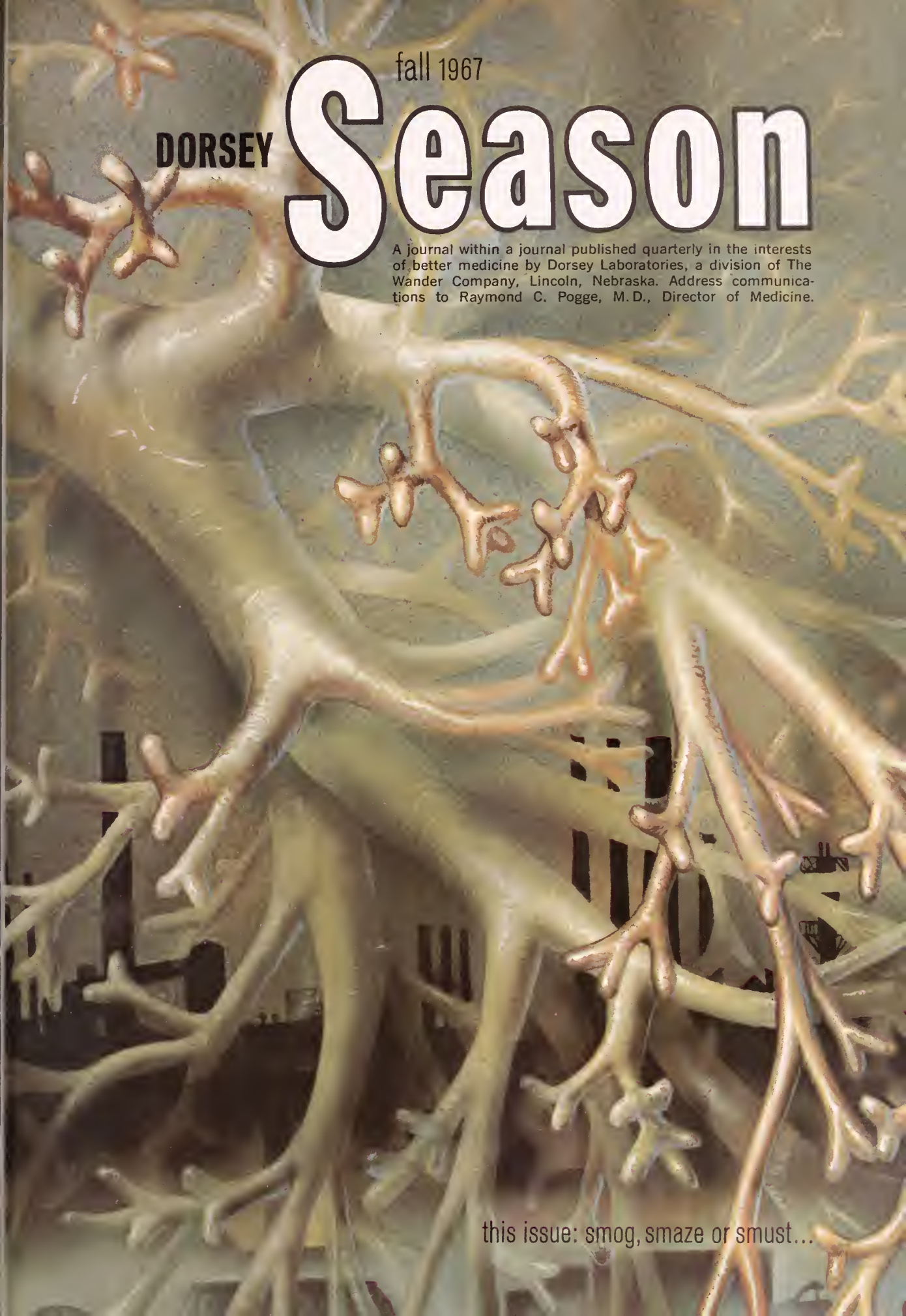
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this issue: smog, smaze or smust...

Smog, smaze or smust...effects of air pollution on upper respiratory tract

Nathan Flaxman, M.D., Diplomate, American Board of Internal Medicine, Chicago, Illinois

In Los Angeles it is *smog* (smoke and fog). In New York City *smaze* (smoke and haze). In El Paso *smust* (smoke and dust). The original factor was smoke plus such natural phenomena as fog, haze and dust, but air pollution has mushroomed from a smoke problem in our industrial cities into a major economic, esthetic and public health problem that affects practically every American locality and citizen.[1,2] Respiratory disease, of course, is by far the most costly effect of air pollution, for contaminated air can aggravate our illnesses, deplete our strength and shorten our life span.[1]

The greatest problem in dealing with solid wastes is that they are not quickly returned to dust. To aid the decomposing process, the great bulk of such waste is burned, polluting our air in the process.[3] Dr. Jack McKee of the California Institute of Technology[4] has calculated that in Los Angeles County, which has more than six million people, about three pounds of gaseous wastes per person per day (on a dry-weight basis) enter the atmosphere. This is twice as much as solid refuse disposal and six times as much as the contaminants in waste water. It is estimated that in New York City, 730 pounds of pollutants, a little over half the size of a compact two-door sedan of foreign make, is annually thrown into the air for each man, woman and child in the city.[5]

Air pollution is an evident factor, not only in the common cold and upper respiratory disease, but also in chronic bronchitis,[2] pulmonary emphysema,[6] bronchial asthma,[7] pneumonitis and lung cancer.[8] Its effect on the incidence of pulmonary tuberculosis is unproved,[9] although it is conceivable that the presence of various materials polluting the air might do this. A siege of smog in Denver, the "mile high city," in December 1965 was accompanied by respiratory infection that doubled normal absentee rates in schools, factories and city government.[10]

While air pollution is only one factor, it has become important in the causes of most of the afflictions of the respiratory tract. This has been shown not only by the Denver occurrence, but also by detailed study[2] of respiratory illness in a small group of 313 men



from October 1962 to May 1963 when there were 202 episodes involving the upper respiratory tract. The attack rate of illness was related in time to increased concentration of both smoke and sulphur dioxide in the atmosphere of the district in which the men lived.

Other factors often mentioned, include exposure to those who have colds, exposure to extreme changes of temperature, allergy and bacterial infection. However, when low individual resistance due to lack of rest, overwork, fatigue, improper or unbalanced diet, previous illness and emotional stress are included as causes, we enter the realm of somewhat obscure relationships. Much more emphasis can be placed on the role of polluted air.

The symptoms, signs and complications of involvement of the upper respiratory tract, especially the common cold, are the same regardless of the causative factor. Swelling of the lining of the nose, the scratchy dry throat, the discharge from the nose at first watery then thicker, discolored and more tenacious, the eyes tearing, and frequent sneezing are all part of the Number 1 human ailment. Concurrent or residual sinusitis when mucus is trapped there, middle ear involvement due to interference with drainage, laryngitis and bronchitis are complications of the common cold. The primary interference is with a most important function of the nose—the cleansing of foreign matter in the first line of "air defense" to prevent it from entering the breathing tract.

However, the diagnosis and subsequent decision on how to treat the patient so affected rests basically on the relief of symptoms that cause him the misery. The stuffed, runny nose, the clogged ears, and the harsh dry cough—all the symptoms that make common cold sufferers feel miserable and interfere with their sleep—can be alleviated with medications of the oral nasal decongestant/antihistamine combination type. The burning sensation in the throat, soreness of the chest and even chest pain can also be relieved by such medication. Rest in bed if there is fever (but confined to home at least), liberal fluids, uniformly warm surroundings and adequate humidity in the room, are all helpful adjuncts to the medication. Most common cold sufferers recover rapidly and are symptom-free in four to ten days.

Further treatment, altered by the fact that the affliction hangs on for more than the usual duration of the common cold, requires consideration of allergy, which is most frequently the prolonging factor. But air pollution itself may often be the culprit.

(Concluded on following page)

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At the Third National Conference on Air Pollution held recently, it was emphasized that this subject had received more attention in the past four years than in all previous history. Spicer,[11] an active participant at this conference, reiterated that it behooves the practicing physician to be aware of trends in respiratory disease and to accept a major role in community action relating to air pollution and respiratory health. By taking a positive stand physicians have been instrumental in the development of anti-pollution legislation. An outstanding example is Los Angeles where major steps have been taken by abolishing coal burning, and even banishing oil burning, seven months a year. Natural gas must be used instead and it must be used by industry when available. Backyard incinerators have been abolished in favor of landfill disposal, and building incineration ended except for a few expensive smokeless furnaces.[10] Concerted action can be taken against particular industrial nuisances. One company that disregarded complaints discovered its error when thousands of its credit cards were returned by irate customers who decided to patronize competing companies.[12]

Summary. Respiratory disease is the most important and most costly effect of air pollution, whether termed smog, smaze, or smust. Air pollution is an economic, esthetic and public health problem that affects practically every American locality and citizen. New sources of air pollution are invisible and odorless, but the harmful gases and liquid droplets are there. Triggered by sunlight, some of these undergo mid-air chemical changes and the results are even more irritating to the upper respiratory tract. The symptoms, signs and complications, especially of the upper respiratory tract, can be readily aborted by modern medication but may be unduly prolonged by polluted air. In steps taken to prevent this, the practicing physician can take a major role.

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The medical profession's first statewide citizenship conference, termed "Political Action '68," will take place on October 21st and 22nd at Oklahoma City's Skirvin Hotel under the sponsorship of the Oklahoma Medical Political Action Committee.

OMPAC, which has shown the greatest membership gains of any state political action organization in the nation during the past year, now boasts a strength of nearly seven hundred state physicians and their wives. Doctor Rex Kenyon, OMPAC state chairman, said the conference planned for October "marks the culmination of a very successful membership building program and the beginning of an effective political action plan for the 1968 elections."

"We expect to attract several hundred participants to our "Political Action '68 meeting," Kenyon said. The conference is designed to fully disclose the background, legal base, and philosophy behind non-partisan collective political activity. In addition, political professionals will discuss the need for organizations and activities of this type in achieving representative government. Finally, OMPAC will reveal its general plans to become involved in state and national races during 1968 "in situations where statewide medical resources—both manpower and money—can be concentrated on significant contests where the issues are most distinct and the chances of victory most probable."

Congressmen to Participate

Spearheading the program are two U.S. Congressmen, Representative Page Belcher (R., Okla.) and Representative John Rarick (D., Louisiana). Belcher, who will appear Saturday afternoon, will discuss "Working With The Candidate". Rarick's Saturday topic will be "Physicians In Politics."

The chairmen of both major political parties, E. L. "Bud" Stewart (Republican) and William G. Kerr (Democrat), are scheduled to speak on "Working With The Party." The President Pro Tempore of the State Senate, Clem McSpadden will emphasize the importance of state races with his talk, "Politics Begins At Home."

Two leaders of OMPAC's national affiliate, the American Medical Political Action Committee will lead off Saturday morning's program. Blair J. Henningsgaard, M.D., AMPAC Board Chairman from Astoria, Oregon, has the topic of "AMPAC—Its Genesis and Impact." Hoyt D. Gardner, M.D., Louisville, Kentucky, will discuss "The Program and Outlook for 1968" from his viewpoint as Secretary-Treasurer of AMPAC.

The national legislative situation, and the relationship between good laws and the election of good lawmakers, are the subjects to be covered by James W. Foristel, LL.B., AMA representative from Washington, D.C.

A delegation of political action committee representatives from the nation's leading state, Oregon, will present proven techniques for success during Sunday morning's session. They will be followed by a presentation on medical association—political action committee relationships as developed by President Kenneth M. Kressenburg, M.D., of the Tennessee Medical Association.

Doctor Kenyon will outline "OMPAC's Perspective for '68" at the conclusion of the Sunday morning program.

A Saturday evening social event "The Cocktail Caucus," will provide an interlude in the day and one-half conference, and a noted political historian, OU Professor Arrell M. Gibson, Ph.D., will speak at Saturday's luncheon on "The History of Party Politics in Oklahoma."

Doctor Kenyon said the conference will be promoted by mail to all state doctors and auxiliary members and through the special efforts of OMPAC Directors who live througout the congressional districts. "OMPAC affords us our best chance to preserve medicine from harmful legislation," Kenyon concluded, "and the October conference offers a singular opportunity to get OMPAC moving to its full potential." □

Research Foundation Schedules Symposium

On the occasion of its 20th anniversary, the Oklahoma Medical Research Foundation will present a symposium on "Man and Molecule: Biologic Regulation." The two-day meeting will be held in the Sheraton-Oklahoma Hotel on November 30th and December 1st, 1967.

Visiting faculty for the program and their topics will be doctors: Rene Dubos, chairman, "The Emergence of Individuality"; U.S. von Euler, "Some Problems Associated With the Mechanism of Adrenergic Neurotransmission"; John Gofman, "Human Serum Lipid and Lipoprotein Distributions and Human Atherosclerosis: Implications for the Problem of Clinical Coronary Heart Disease"; Sol Spiegelman, "An **in vitro** Analysis of a Replicating Viral Nucleic Acid Molecule"; and, Paul A. Weiss, "Functional Adaptation."

Members of the Medical Foundation who will be appearing on the program will be doctors: Paul T. Condit, "Folic Acid Antagonists"; Robert H. Furman, "Studies on Hyperchylomicronemia"; B. Connor Johnson, "Regulation of Prothrombin Synthesis at the Ribosomal Site by Vitamin K"; and Stewart G. Wolf, "Studies on Sudden Death in Man and Animals."

For further information on registration, write to Mrs. Esther Pahlka, Oklahoma Medical Research Foundation, 825 N.E. 13th Street, Oklahoma City, Oklahoma 73104.

OSMA To Sponsor Tax-Sheltered Pension

OSMA's Council on Insurance is taking steps to create a tax-sheltered pension program for all association members, according to Chairman C. E. Woodard M.D., Tulsa.

The program will be of the "deferred compensation" type which will make it uniquely advantageous to state doctors.

In brief, here's how the plan will work, subject to final approval by the Internal Revenue Service and the OSMA's House of Delegates:

A physician may contract with Oklahoma Blue Shield to withhold a percentage of his annual Blue Shield earnings (probably up to 30%) and to invest this amount in his behalf in an insurance annuity program or a common stock fund (or a combination of both).

The amount of Blue Shield earnings which a physician elects to defer the receipt of will not be subject to current income taxes. It will be taxed only when it is withdrawn at the time of retirement, presumably at a time when income is decreased and at a resultant lower tax rate.

A deferred compensation plan requires special approval by the Internal Revenue Service, but the precedent has been established in Washington state and in New York City.

This type of program avoids certain disadvantages contained in so-called Keogh plans. It does not require the establishment of comparable retirement programs for all employees with three or more years tenure, nor does it require the doctor to grant the employee 100 per cent vested interest at the outset. Moreover, for most state physicians it will be possible under the OSMA approach to set aside more tax-deductible dollars each year than the $2,500 maximum which is allowed under Keogh legislation.

OSMA's legal counsel is currently drafting a proposal to submit to the House of Delegates, the Blue Shield Board of Trustees, and the Internal Revenue Service (in that order). In addition, specifications for the insurance annuity are being prepared for bid purposes, and proposals are being solicited and studied from various financial institutions interested in managing the investment portfolio.

Blue Shield's Board of Trustees has approved participation in the program provided it doesn't jeopardize the organization's non-profit status nor result in any increased cost to Blue Shield policy holders.

Serving with Doctor Woodard on the Council on Insurance are: Jack D. Fetzer, M.D., Woodward, C. Alton Brown, M.D., Oklahoma City, Samuel R. Turner, M.D., Tulsa, Robert W. Kahn, M.D., Oklahoma City, Myra Peters, M.D., Tulsa, Richard H. Burgtorf, M.D., Shattuck, Paul H. Rempel, M.D., Enid, Maurice C. Gephardt, M.D., Muskogee, James Beavers, M.D., Oklahoma City, and James W. Murphee, M.D., Ponca City. □

AMA Clinical Convention To Meet in Houston

A scientific program especially designed for the physician in practice again will be featured at the AMA's Clinical Convention, to be held in Houston November 26th-29th.

The four-day meeting will include scientific sessions on 18 major topics, four postgraduate courses, breakfast roundtable conferences, closed-circuit television and medical motion picture programs, and more than 150 scientific exhibits.

Of special interest are the postgraduate courses, expanded to four topics: Fluid and Electrolyte Balance, Oncology, Cardiovascular Disease, and Obstetrics and Gynecology. Each course will consist of three half-day sessions featuring outstanding teachers.

Scientific and industrial exhibits and all scientific meetings will be in Houston's new Astro Hall, a part of the Astrodome complex.

Topics at the general scientific sessions include: Aerospace medicine, antibiotics, arthritis, cancer, cardiovascular medicine, cardiovascular surgery, dermatology, endocrinology, gastroenterology, general surgery, genitourinary treatment, geriatrics, obstetrics and gynecology, ophthalmology, otolaryngology, pediatrics, and psychiatry. There also will be a session on "new cares" featuring a discussion of legal and social problems now faced by the physician.

Breakfast Roundtable Conferences will discuss (1) Indications and Limitation of Uses of Antibiotics, (2) The Moral and Ethical Aspects of Caring for the Dying Patient, (3) Management of Cerebrovascular Insufficiency, and (4) Adolescence, Age of Rebellion; Some Related Psychiatric Aspects. Numbers 1 and 2 will be Tuesday morning, November 28th; numbers 3 and 4 will be Wednesday morning, November 29th. Tickets will be $3 each.

An outstanding program of closed-circuit color television and more than 25 medical motion pictures will be presented. Live, color television broadcasts of surgery and discussions from Houston's Hermann Hospital will be seen on a large screen in Astro Hall. Medical motion pictures will include three or four premier showings, plus several films that were well received at the AMA annual convention last June.

The AMA House of Delegates will meet at the Shamrock-Hilton Hotel.

The Ninth National Conference on the Medical Aspects of Sports will be Sunday, November 26th, at the Hotel America in conjunction with the Clinical Convention. Sponsored by the AMA Committee on the Medical Aspects of Sports, the meeting will feature morning, afternoon, and evening discussions of problems faced by team physicians at all levels of athletic competition. □

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OC Clinical Society To Meet Oct. 2nd-4th

Thirteen outstanding guest speakers will appear during the 37th Annual Fall Conference of the Oklahoma City Clinical Society, October 2nd, 3rd and 4th, at the Sheraton-Oklahoma Hotel in Oklahoma City.

A full schedule of general assemblies, specialty lectures, roundtable luncheons, specialty group dinners in addition to 56 technical exhibits has been arranged. An important portion of this year's program relates to an all day symposium on "Immunology" to be held Monday, October 2nd. Specialty lectures to be held throughout each day of the meeting will not interfere with the current lectures in the general assembly room.

Augmenting the list of out-of-state speakers, members of the faculty of the University of Oklahoma Medical Center will present a special program Wednesday afternoon, October 4th, on "What's New and What's Usable of What's New."

Speakers and Their Specialties

Appearing on the program will be: Bobby Ray Alford, M.D., (Otolaryngology) Baylor University College of Medicine, Houston; Murray L. Bowen, M.D., (Psychiatry) Georgetown University Medical Center, Washington; Elliot F. Ellis, M.D., (Pediatrics) University of Colorado School of Medicine, Denver; James S. Krieger, M.D., (Gynecology) Cleveland Clinic Foundation, Cleveland; Kenneth P. Mathews, M.D., (Internal Medicine) University of Michigan Medical School, Ann Arbor; Ernest E. Muirhead, M.D., (Pathology) University of Tennessee College of Medicine, Memphis; J. Fred Mullins, M.D., (Dermatology) University of Texas Medical Branch, Galveston;

Robert L. Schmitz, M.D., (Surgery) Loyola University Stritch School of Medicine, Chicago; Nels Magne Strandjord, M.D., (Radiology) University of Chicago School of Medicine, Chicago; Oscar Sugar, M.D., (Neurology) University of Illinois College of Medicine, Chicago; Oscar



JAMES S. KRIEGER, M.D.



GEORGE D. WILBANKS, JR., M.D.

A. Thorup, Jr., M.D., (Medicine) University of Arizona College of Medicine, Tucson; Richard C. Troutman, M.D., (Ophthalmology) University of New York, New York; and George D. Wilbanks, Jr., M.D., (Obstetrics and Gynecology) Duke University Medical Center, Durham, North Carolina.

Entertainment

The annual banquet honoring the guest speakers and associate members and their wives will be held on Tuesday evening in the Persian Room of the Skirvin Tower Hotel. A social hour at 7:00 p.m., will precede the banquet at 8:00 p.m. Special musical entertainment will be provided by the Browning Family, nationally famous musical group who have one of the fastest-moving and enjoyable musical variety shows on the road.

Wives of attending physicians will be entertained with many special events including an "Oklahoma Anniversary Extravaganza Luncheon" to be held in the Persian Room of the Skirvin Tower Hotel on Tuesday, October 3rd.

Registration

A $25.00 registration fee includes admission to all general assemblies, specialty lectures, roundtable luncheons, specialty group dinners and technical exhibits in addition to complimentary tickets to the annual banquet and musical entertainment.

The three-day meeting is acceptable for six prescribed hours by the American Academy of General Practice. □

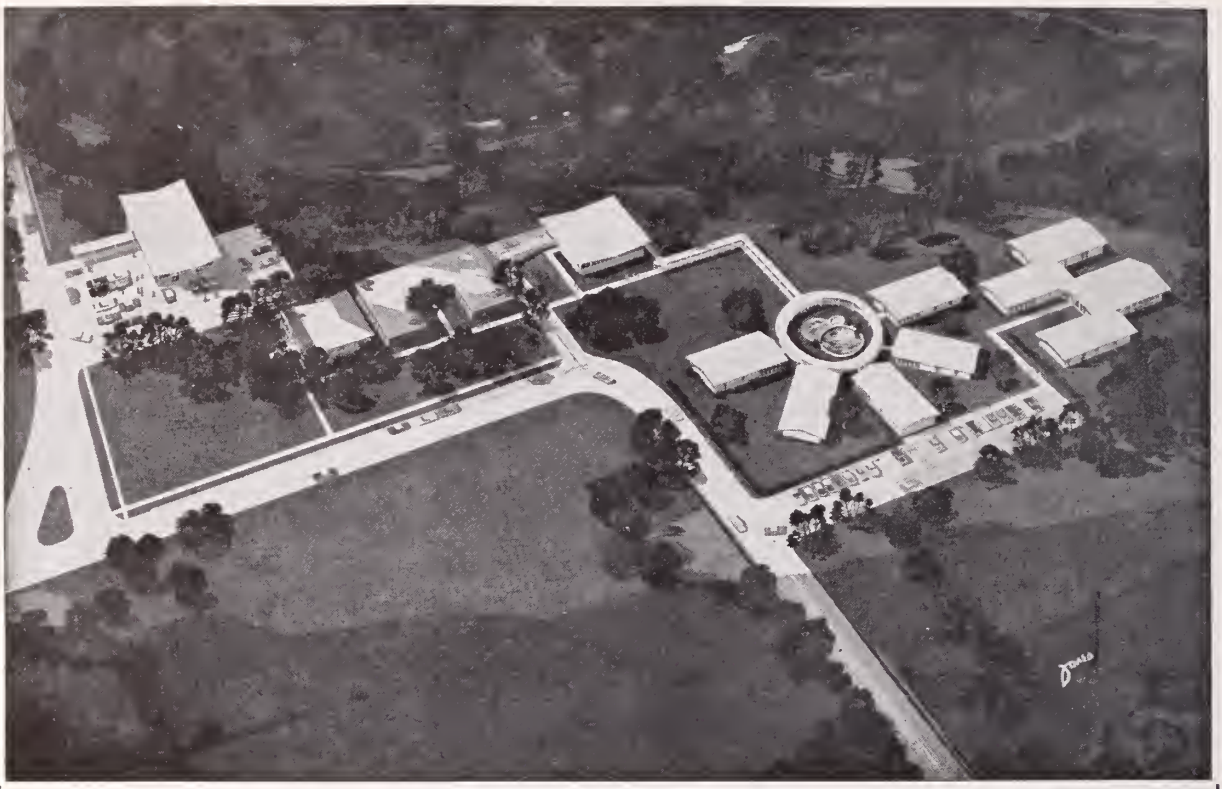
Orthopaedic Surgeons To Meet In Dallas

The third annual postgraduate course on the treatment of fractures and other injuries sponsored in Dallas, Texas, by the American Academy of Orthopaedic Surgeons will be held November 8th to November 11th at the Marriott Motor Hotel, 2101 Stemmons Freeway.

The four-day course of lectures, audio-visual demonstrations, and panel discussions is to be conducted by the Academy's Committee on Injuries in cooperation with the University of Texas Southwestern Medical School, Dallas. It is concerned primarily with trauma of the musculoskeletal system, chest, and abdomen and will include a panel on athletic injuries.

The course has been approved by the American Academy of General Practice for 17½ hours of prescribed credit.

Any physician interested in attending this meeting should contact Doctor Charles F. Gregory, M.D., 5323 Harry Hines Boulevard., Dallas, Texas 73235. □



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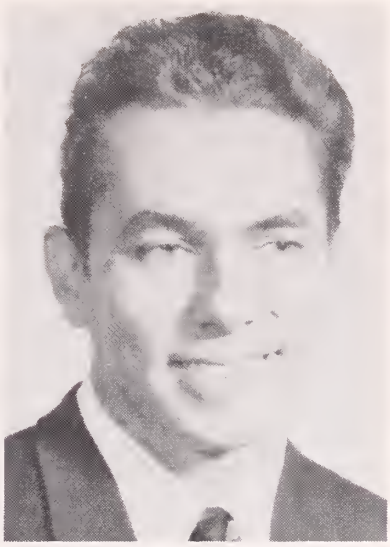
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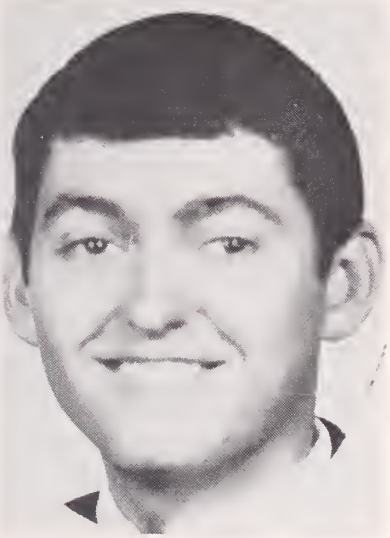
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OSMA Awards Five Scholarships

Five freshman medical students at the University of Oklahoma School of Medicine will find it financially easier to attend class this year. The students were awarded $500 scholarships by the OSMA Loan and Scholarship Fund.

Each year five incoming freshmen with the highest cumulative averages for the medical college admission test, premed courses and other factors are selected by the medical school and offered the OSMA scholarships. The $500 pays the students' first two semesters' tuitions.

This year's recipients are as follows: Larry Dale Balzer, Hooker, Oklahoma; Marvin E. Goforth, Bethany, Oklahoma; William John Graham, Oklahoma City; Roy E. Hardman, San Antonio, Texas; and Damaris Sue Young, Oklahoma City.

The scholarship fund was established by the OSMA House of Delegates on May 7th, 1961. Since that time $15,000 in non-refundable scholarships has been awarded. In addition, some $31,000 has been loaned to qualified students on the basis of financial need. □



WILLIAM JOHN GRAHAM

Pediatricians Plan Annual Meeting

Clark West, M.D., University of Cincinnati School of Medicine, will be the guest speaker at the Oklahoma Chapter of the American Academy of Pediatrics annual meeting. The meeting is to be held in the main auditorium of the O.U. Medical Center, September 21st and 22nd.

Doctor West will address the opening session of the meeting Thursday afternoon, September 21st at 1:30 p.m. As a professor of pediatrics, he is well known for his clinical and research work in the field of renal diseases.

The annual meeting is being held in cooperation with the pediatrics postgraduate course of the O.U. School of Medicine. Several scientific papers will be given during the two days.

A social event is planned for Thursday evening at Glen's Hickory Inn. All doctors and their wives are invited to cocktails and dinner.

Jake Jones, M.D., Shawnee, program chairman for the meeting said, "It might be pointed out that the Thursday and Friday meeting precedes the O.U.-Washington football game at Norman on Saturday, September 23rd." □

Health Recruiting Organization Formed

Delegates from ten state health organizations met in the Oklahoma State Medical Association's office building on August 18th to form the "Oklahoma Council for Health Careers," a jointly-sponsored statewide activity designed to spotlight career opportunities in the health sciences.

This first Board of Directors meeting of the careers council included representatives from the OSMA and its Auxiliary, the Oklahoma Hospital Association and its Auxiliary, the Oklahoma State Nurses Association, the Oklahoma Society of Medical Technologists, the Oklahoma Physical Therapy Association, the Oklahoma Occupational Therapy Association, the Oklahoma Dietitians Association and the Oklahoma League for Nursing.

Tom C. Points, M.D., Oklahoma City, representing the medical association as a director, was elected Chairman of the Board. Other OSMA members on the Board of Directors are Marcella Steel, M.D., Tulsa, and Mrs. Arthur N. Springall (Woman's Auxiliary).

Elected Chairman-Elect at the August 18th meeting was Don Wells, Oklahoma City, a medical technologist. Richard Luttrell, hospital administrator from Norman, was elected Treasurer.

Mr. Kenneth Hager, formerly associated with the Oklahoma Hospital Association, has been employed by the Oklahoma Council for Health Careers as Executive Director. He has already established an office at 619 N.E. 15th Street, Oklahoma City.

Financing of the new council will come primarily from three sources: Annual dues from participating member organizations; dues from non-participating associate members; and contributions from the Oklahoma Regional Medical Program.

Initial efforts of the council will be to develop a financial base from which a large-scale public information program can be carried out, development of recruitment pamphlets and other printed materials, production of mass media tools such as billboards and television spot announcements, and the planning of an information program for quick implementation.

The focus of the recruiting program will be placed on highschool and college students with the end objective to interest more and better-qualified students toward selecting careers in the health field. Recruiting efforts will be coordinated with priority vocations known to be suffering from critical personnel shortages.

Other council plans include an ongoing educational program for highschool and college guidance counsellors, the development of improved health training facilities with greater productive capacities, and the stimulation of community action programs to overcome specific local shortages of health personnel.

The Oklahoma State Medical Association's Board of Trustees was the first organization to contribute financially to the careers council. □

Membership Directory Due in November

November 1st will be the publication date for the 1968 OSMA Membership Directory. One copy of the directory will be mailed to each member-physician as soon as it is printed.

This year's publication will have two complete rosters of the 2200 doctors belonging to the OSMA. The first roster will list them alphabetically and the second will list them by city.

The alphabetical listing will include pertinent information about the doctor and his practice. It will include his name, mailing address and ZIP code, office telephone, year of birth, medical school and year of graduation and medical specialty.

Professional card listings are available in this directory. Any physician interested should contact the OSMA Executive Office in Oklahoma City.

The directory is distributed to each member-physician as a service of his association. It is also distributed, at a nominal charge, to companies that service doctor's offices. Total distribution of the 1968 edition will be approximately 3000 copies. □

Postgraduate Courses And TV Listed

"Always On Tuesday" is the motto being used by the OSMA and the Office of Postgraduate Education of the O.U. Medical Center for this year's Regional Postgraduate courses and Medical Television Series.

A Regional Postgraduate Course is held in some regional center in the state each Tuesday. Each of the programs are acceptable for four prescribed credit hours by the American Academy of General Practice. They are being jointly sponsored by the Medical Center and the OSMA Council on Professional Education.

The Medical Television Series is offered twice each Tuesday over educational TV stations in Oklahoma City (channel 13) and Tulsa (channel 11). The programs are broadcast at 7:00 a.m. and 9:30 p.m. to give all Oklahoma physicians a chance to view them.

The regional programs are scheduled as follows:

September 26th: Ada, Valley View Hospital, "Coronary Artery Disease"

October 10th: Enid, Midwestern Inn, "Psychiatric Tools for Everyday Practice"

October 17th: Muskogee, Tradewinds Motor Hotel, "Diabetes"

October 24th: Miami, Thunderbird Motel, "Coronary Artery Disease"

The Medical Television Series offers the following:

September 26th: "An Informal interview with Dr. Maxwell M. Wintrobe"

October 3rd: "Clues in the Early Detection of Cancer"

October 10th: "Digitalis and Diuretics"

October 17th: "Functional G. I. Disorders"

October 24th: "Oral Manifestations of Systemic Disease"

October 31st: "The Patient with Functional Illness"

All of the October television programs were prepared by the University of South Carolina School of Medicine.

Physicians may contact OSMA for a pre-registration blank. □

PTA Program on Smoking and Health

The Oklahoma Congress of Parents and Teachers and its more than 500 local units are joining hands to combat one of the deadliest-known threats to our children's future health and long life—teenage smoking.

Mrs. Letha Billings of Woodward, Oklahoma, President of the Oklahoma Congress, asks the physicians of our state to join with the P.T.A. in educating our young people so that "theirs is the new, smokeless generation."

The P.T.A. program is simple in concept but far-reaching in implication. A member of the local P.T.A. — a parent — will visit in person, the parents of each sixth, seventh and eighth grader in the school, talk with them and give them a P.T.A. pamphlet, "His First Cigarette May Be a MATTER OF LIFE OR DEATH." In this way, parents will know the facts on smoking and health and be able to face the problem when and if it arises with their children.

Sometime this winter, each local P.T.A. is being urged to have a program on smoking and health. It is being further suggested that they call upon local physicians to be present and to explain the health dangers involved. It is hoped that Oklahoma physicians will respond to this appeal for help.

Study after study reveals that physicians, more than any other profession, realize the danger inherent in smoking and are themselves quitting the use of cigarettes. By both precept and example, they are influencing our youngsters not to start and our adults to quit. By joining hands, health professionals, educators and parents are leading the way to the time when cigarettes are a thing of the past, not through force or legislation but through education.

The Oklahoma Interagency Council on Smoking and Health has both professional and lay pamphlets, movies, slides and prepared printed material available upon request for any physician volunteering to do this valuable community service. Call or write to Health Education, State Health Department. □

Heart Association Schedules Program

A one-day program has been planned by the Oklahoma Heart Association for Sunday, October 1st, in the Skirvin Hotel in Oklahoma City. The topic will be "Primary Myocardial Diseases."

Two out-of-state lecturers who will appear on the program are: Thomas W. Mattingly, M.D., Program Coordinator of the Regional Medical Program of Metropolitan Washington, Washington, D. C., and Noble O. Fowler, M.D., Professor of Medicine, Department of Internal Medicine, University of Cincinnati, Cincinnati, Ohio.

AAGP Credit has been requested for the session.

Physicians are urged to send their reservations to the Oklahoma Heart Association, 825 N.E. 13th, Street, Oklahoma City, Oklahoma 73104. □

Samuel Goodman Memorial Symposium Held in Tulsa

"Current Thoughts on Hematology" was the subject of the fourth annual Samuel Goodman Memorial Symposium. The meeting is sponsored each year by St. John's Hospital in Tulsa to perpetuate Doctor Goodman's interest in continuing medical education. The doctor was Chief of Medicine and Chief of Staff of the hospital before his death in 1963.

The physicians attending the meeting, September 15th and 16th, heard scientific papers by four outstanding hematologists, Doctors Theodore A. Spaet, William C. Levin, Louis R. Wasserman, and Steven O. Schwartz. All are nationally recognized for their contributions to hematology.

The symposium was concluded Saturday evening with a dinner-dance at the Meadowbrook Country Club in Tulsa. □

MEDICAL SERVICES . . .

(Continued from Page 484)

get some state Hill-Burton money to build a hospital, he will not support the development of the Medical Center. This is unfortunate. The point that he and nearly everyone else overlooks is that health services are people. Empty buildings are meaningless and badly staffed hospitals are worse.

It takes time to produce health manpower—particularly physicians. The physician who will enter practice in 1975 is now a freshman in medical school. By the time he finishes four years of medical school, a year of internship, three to four years of resident training, and two years in the military services, 1975 will have arrived. It is difficult to get people to look eight to ten years ahead, but that is a matter that can be overcome by constant repetition of facts and truth. An informed public is the prime essential to meeting their needs.

The "Oklahoma Plan" for developing a socially responsible medical education, training and research program based on its state society's needs is now recognized by the Surgeon General and many of the nation's health leaders including the American Medical Association, as a model project. One that should be emulated by other states. The accomplishment of our goals will require—and has already required endless hours of work and many frustrations—but the hope for accomplishment really lies in the hands of the people of Oklahoma. They are not well informed, they are somewhat apathetic and tend to complain and blame someone else—usually the Medical Center or the legislature for the deficits in health care. This brings up the question of your own very real social responsibility—for only with your informed assistance, talents and resources, can we stimulate the public to support the only way to resolve their problems before a calamity occurs.

I ask you to join in our effort not only to provide the availability of health services to all Oklahomans, but to insure the growth and development—if not indeed, the survial of our smaller towns and to promote the industrial and economic growth potential of our state.—

James L. Dennis, M.D. □



EDWARD R. ANNIS, M.D.

Doctor Annis To Speak In Oklahoma

Edward R. Annis, M.D., Miami, Florida, will address a special meeting of the Pottawatomie County Medical Society Thursday evening, September 28th. The meeting is to be held in the Cinderella Motel Dining Room in Shawnee, Oklahoma.

Doctor Annis is a member of the American Medical Association Board of Trustees and was president of the AMA in 1963-64. He has served as chairman of the AMA's National Speakers Bureau and has won prominence as a speaker and debater, appearing on dozens of nationally televised programs.

His two-day visit to Shawnee is being jointly sponsored by the Pottawatomie Society and the AMA. During his stay he will address the Public Relations Committee of the society, a general assembly of the Shawnee Senior High School, the chapel assembly of Oklahoma Baptist University, a student assembly at St. Gregory College, and a joint meeting of the Chamber of Commerce and Shawnee civic clubs.

Nearly 200 out-of-county doctors are being invited to attend the special Doctors' Dinner Thursday night to hear Doctor Annis speak.

From 1963 to June 1964, Doctor Annis was president of the American Medical Association and the World Medical Association. He is the second American physician to hold both presidential offices simultaneously.

The doctor was born in Detroit in March, 1913. He graduated from the University of Detroit with a BS degree in 1933. Five years later he earned his M.D. degree from Marquette University School of Medicine and began his medical practice in Tallahassee, Florida.

Doctor Annis' visit grew out of a suggestion by several Pottawatomie County doctors that the county society should have a program devoted to the problems that medicine is facing. It was the consensus of the group that Doctor Annis would be the best speaker for this topic. □

Oklahoma Rheumatism Society Schedules Annual Meeting

All Oklahoma physicians are urged to attend the Annual Scientific Meeting of the Oklahoma Rheumatism Society to be held in the Cotillion Room of the Sheraton-Oklahoma Hotel, Sunday, October 1st, 1967. The day-long program will begin at 8:30 a.m. and adjourn at 5:00 p.m. A $5.00 registration fee will include lunch.

Two out-of-state guest speakers have accepted invitations to appear before the group. They are: Eugene V. Barnett, M.D., Associate Professor of Medicine, University of California School of Medicine, Los Angeles, and Currier McEwen, M.D., Department of Medicine, New York University Medicial Center, New York.

Participants from Oklahoma City include: J. N. Owens, Jr., M.D., Garmon H. Daron, Ph.D., James P. Bell, M.D., Richard W. Payne, M.D., and William K. Ishmael, M.D.

Sponsors for the program will be the Oklahoma Rheumatism Society, the Arthritis Foundation, the Office of Postgraduate Education, University of Oklahoma Medical Center, the Chronic Disease Section of the State Health Department, Geigy Pharmaceuticals, Lederle Laboratories and Wyeth Laboratories. □

Phelps To Address Medical Students

The annual OSMA-sponsored banquet for members of the Oklahoma University Chapter of the Student American Medical Association will feature Malcom E. Phelps, M.D., El Reno, as speaker.

Phelps, Vice-President of the American Medical Association, served for one year as field director of Project Vietnam and will address the students and their wives and dates on "What A Medical Student Can Expect in Vietnam."

The banquet is scheduled for November 3rd at the Skirvin Hotel's Convention Center, Oklahoma City. About three hundred persons are expected to attend, including officers and trustees of the Oklahoma State Medical Association.

Following the OSMA's banquet for the OU group, the Student AMA chapter will continue the evening's activities by sponsoring a dance. □

University of Missouri To Hold "M.D." Day

A wide variety of subjects — from automobile injuries in pregnancy to computers in medicine — will be discussed by specialists on the program for the eighth annual M.D. Day on the University of Missouri's Columbia campus October 27th-28th. Guest speakers will include seven members of the faculty of the University of Oklahoma School of Medicine.

Copies of the program will be mailed to all Oklahoma physicians in advance of the meeting. The program is acceptable for six and one-half accredited hours by the American Academy of General Practice.

Tentatively, the program will include such topics as electromyography, sudden deaths, automobile injuries in pregnancy, salvaging limbs by reimplantation, the evaluation of patients as anesthetic risks, hospital infections, interpreting white counts, and the new medical team: The physician and computer.

A banquet to be held at the Holiday Inn West at 7:30 p.m. Friday will be preceded by cocktails at 6:30.

On Saturday morning the program will begin at 9 o'clock with talks on pneumonia and clinical pathology conferences. A dutch-treat luncheon will be served in the Medical Center at 11:30 before the Missouri-Oklahoma football game.

A limited number of tickets for the football game have been reserved. Order blanks for tickets and hotel or motel reservations will be included with the printed program to be mailed from the Office of Continuing Medical Education.

The Oklahoma visiting faculty for the medical conference will include Doctor Warren Crosby, associate professor of obstetrics-gynecology; Doctor C. G. Gunn, associate professor of medicine and physiology; Doctor Richard A. Marshall, associate professor of medicine; Doctor Irwin H. Brown, director of postgraduate education; Doctor Edward N. Brandt, Jr., director of computer operations and the biostatistical unit; and Doctor G. Rainey Williams, professor and vice-chairman of surgery. □

Doctor Rouse To Speak To Medical Assistants

Doctor Milford O. Rouse, M.D., AMA President, will address the opening day of the 11th Annual Convention of the American Association of Medical Assistants, October 11th-15th, in Los Angeles, California.

The AMA is made up of persons employed or supervised by a licensed doctor of medicine. According to one of its publications, "It is not nor shall it ever become a trade union or collective bargaining agency." In 1962 the AMA House of Delegates whole heartedly endorsed the program.

The convention will be held in the beautiful International Hotel in Los Angeles with advanced registration beginning Wednesday, October 11th. The first general session will be held Friday, October 13th.

The two-day general session will include talks and panel discussions on such topics as: Medico-legal informantion, public relations, interpersonal relations, Tomorrow's Medicine, computers and Title XIX.

A dinner and floor show in the International Ballroom Friday evening and the annual Inaugural Banquet with Holly wood entertainment Saturday evening will top off the social events for this convention.

Mrs. Betty Whitworth, Frederick, Oklahoma, President of the Oklahoma Chapter of AAMA, is urging all members to attend the California convention.

Oklahoman Installed As ADA President

Mrs. Mary C. Zahasky, director of dietetics at the University of Oklahoma Medical Center, was installed as president of the American Dietetics Association Thursday, August 17th, during the organization's annual meeting in Chicago.

Presidency of the ADA caps a long list of offices and major committee posts Mrs. Zahasky has held with the professional association.

Named president-elect last year, Mrs. Zahasky earlier was speaker of the ADA House of Delegates, speaker-elect and delegate-at-large. She was president of the Oklahoma Dietetic Association in 1952-53 and Oklahoma Delegate to the ADA in 1954-56.

Mrs. Zahasky since 1948 has headed the Medical Center's dietetics department and directed the Dietetic Internship Program — the only approved hospital dietetic training program in the state.

A graduate of Framingham (Masachusetts) State Teachers College Mrs. Zahasky interned at Queens Hospital, Jamaica, N.Y., took graduate work at Teachers College, Columbia University and New York University, and worked as an administrative dietitian at St. Vicncent's Hospital, New York City.

During World War II she served as a leiutenant with the 34th General Hospital in the European theater. She is a native of Massachusetts.

Mrs. Zahasky was the recipient of one of the Byliner awards given annually by the Oklahoma City Chapter of Theta Sigma Phi, professional sorority for women in journalism, to recognize achievements of Oklahoma women.

She holds an honorary lifetime membership in the Alumni Association of the OU School of Nursing. Her other honors include a 1963 citation by the Framingham college as an outstanding graduate.

In private life she is Mrs. Jim Zahasky. She and her lawyer husband, daughter Kay and son Jay live at 1500 E. Wilshire Blvd., Oklahoma City. □

OSMA Speakers Bureau To Be Formed

Twenty-five physicians will gather in Oklahoma City on Saturday, September 30th, to inaugurate a new public relations project for the Oklahoma State Medical Association. The doctors will form the nucleus of the OSMA Speakers Bureau.

The bureau is being formed to furnish programs about medicine to selected business, professional and service organizations throughout the state. It will act as a sounding board for medicine's views and opinions. To insure that the bureau will accomplish this purpose, the OSMA will actively solicit speaking engagements for the bureau members.

The September meeting will be a two-day speech clinic conducted by the Officers Services Department of the AMA and will be held in the Skirvin Tower Hotel.

The clinic will consist of instruction on how to prepare a talk, proper delivery, audience analysis and how to handle a question and answer session. The program will be topped off when each participant gives a three-minute talk that will be recorded on video tape and played back through a television set.

Maxwell A. Johnson, M.D., OSMA President said, "The Speakers Bureau will give us a valuable vehicle to carry medicine's views and opinions to community leaders. This direct verbal communication should greatly enhance our public relations and assure us that our opinions are reaching influential audiences." □

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DEATHS

JOHN POWERS WOLFF, M.D.

1897-1967

A prominent Oklahoma City surgeon, John Powers Wolff, M.D., died on August 16th, 1967. Born in Ballard, Missouri, Doctor Wolff graduated from the University of Oklahoma School of Medicine in 1927, where he had served as associate professor of surgery since 1945.

Among his medical affiliations were the Oklahoma City Academy of Medicine, the Oklahoma City Clinical Society, the Southwestern Surgical Congress, the American College of Surgeons and the International College of Surgeons.

ARTHUR H. DAVIS, M.D.

1893-1967

A retired Tulsa ophthalmologist, Arthur H. Davis, M.D., died September 1st, 1967, in Tulsa. A graduate of the University of Louisville School of Medicine in 1919, Doctor Davis had practiced in Oklahoma since 1930.

Recognizing his contributions to the medical profession, the Oklahoma State Medical Association presented him an Honorary Life Membership in 1965. □

BOOK REVIEWS

ONE MAN'S PRACTICE. By Ray S. Greco with Rex A. Pittenger, J. B. Lippincott Company, 117 pages.

This unique little book is a good antidote for the all too common alienated approach to medical practice. We welcome any check on the trend toward reductionism and dehumanization that is creeping into medicine as well as other forms of work. A little short on scientific crispness and literary sophistication, the book does present workable ideas in tangible fashion. Although its flavor is highly personal, this monograph is decidedly not one of the usual romantic accounts of a doctor's medical experiences.

Doctor Greco is a family physician whose professional restlessness led him to participate in a seminar on the psychological aspects of medical practice presented at the Staunton Clinic in Pittsburgh. The chief of that unit, Doctor Pittenger, helped write the book.

It is apparent that this educational experience caused Ray Greco to become a more introspective person—a doctor with new insights about himself and his patients. And his new knowledge and skills have given him confidence in employing a broader medical approach—a style that regularly incorporates psychological factors in his diagnosis and treatment.

Case material is used extensively throughout the book to illustrate a realistic application of principles and techniques derived from the behavioral sciences. Another feature of *One Man's Practice* is the classification of office visits under three headings: No illness, unorganized illness, and organized illness. It is of little importance whether one agrees with this analysis or not. For the author, it is a workable scheme for the use of his new skills in comprehensive medical management — a means of including humanistic sensitivity in his scientific methodology.

Greco quotes Doctor Michael Balint, "It happens so rarely in life that you have a person who understands what you are up to and openly faces it with you. That is what we can do for our patients, and it is an enormous thing." It is now clear that a real understanding of "what a person is up to" calls for more than compassion, something more describable and reproducible than warmth and sympathy. Such emotional traits—most commonly ascribed to the traditional G.P. of an era that is passing—are all right, but they don't necessarily help the patient. Today's family physician (or pediatrician or internist) is most effective when he is able to *empathize* with his patient and be involved with him in a controlled manner. These are actually scientific procedures which come from a consideration of all the circumstances of an individual's total life situation.

It is easy to see how an orderly application of psychological and cultural principles with their associated techniques has sharpened Doctor Greco's perception of his patients' disease and needs. In order to do this he has found it necessary to view the world through the eyes and feelings of his patients. He has attended to the psychosocial factors that regularly figure in the pathogenesis of disease as well as in the individual's concepts about the significance and management of his illness.

Greco indicates he is seeing fewer patients and making less money. However, some graduates of such courses, for example from Doctor James Mathis' *Psychiatry for the Practicing Physician* at the University of Oklahoma, report no drop in patient load or bookings. Undoubtedly, their new orientation has given them new zip and has spruced up their efficiency. Even Doctor Greco's line graph of yearly income shows a recent swing upward to a level which is only 21 per cent below his maximum gross income.

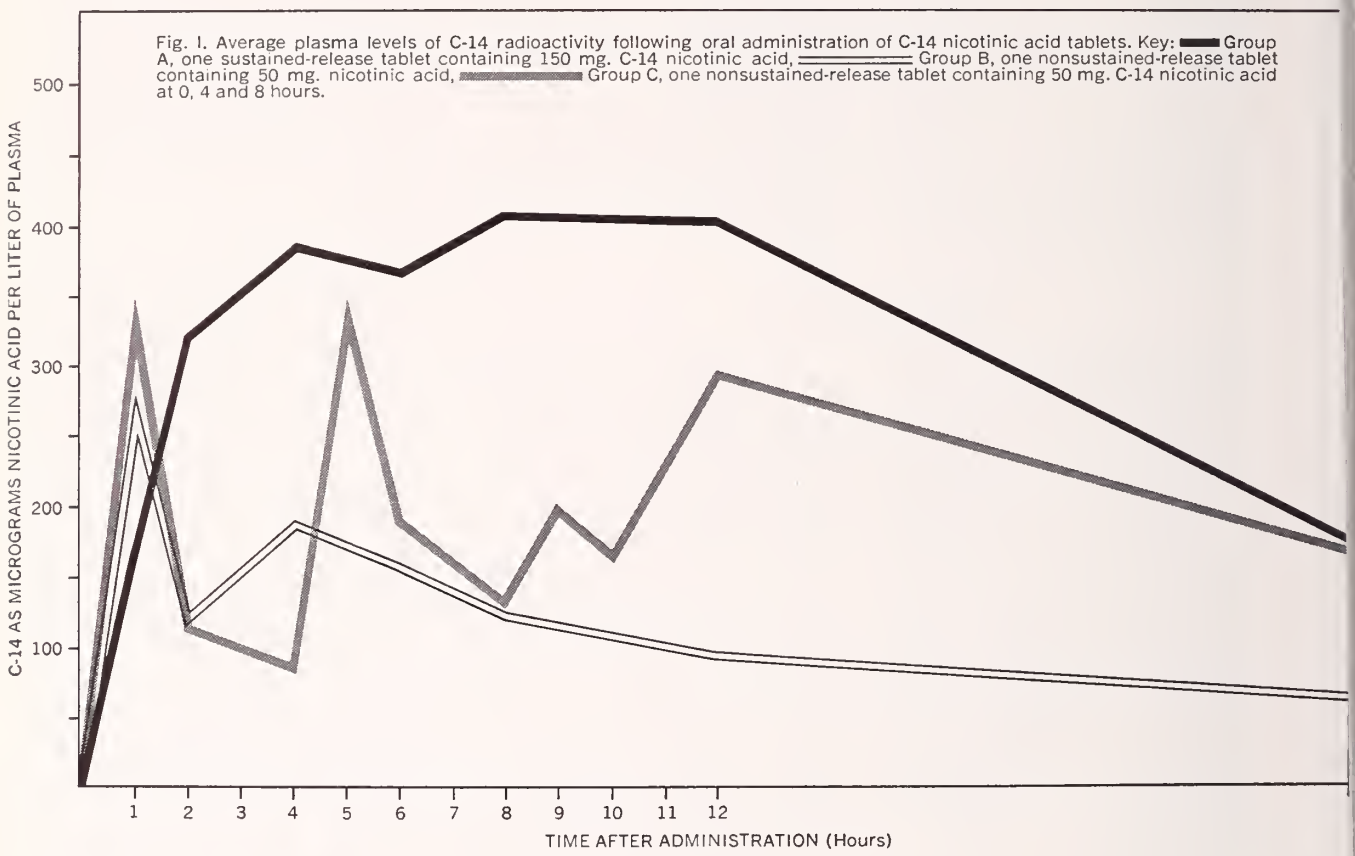
However you measure it, the expanded approach that Doctor Greco describes in this brief monograph has raised the level of his medical care and has made his work more enjoyable and satisfying. Read the book and see how a doctor's own subjectivity is a dimension of medical practice that must take its place with traditional scientific principles and the newer behavioral understanding of patients.—*Roger I. Lienke, M.D.*

THE PEDIATRICIAN'S OPHTHALMOLOGY. A collaborative effort of several authors. Edited by S. D. Liebman, M.D. and S. S. Gellis, M.D. St. Louis: C. V. Mosby Company, 1966, 352 pp. $19.50.

This book is the product of the combined effort of some 25 contributors. Since it is written primarily for the pediatrician and the general practitioner, it should be evaluated

(Continued on Page xxvi)

Sustained circulatory, respirator and cerebral stimulation for t





(fewer absent doses by absent-minded patients)

Human volunteer subjects were administered Geroniazol TT tablets with the nicotinic acid component made radioactive with C-14. Plasma and urine samples were analyzed. (See Figures I and II) The radioactive tracer study substantiated the previous clinical evidence that the release of nicotinic acid from the Geroniazol TT tablet produced a gradual rise in plasma levels to a plateau for a total of 12 hours and more.

Such proven sustained activity makes the management of geriatric patients much easier by minimizing the possibility of neglected doses through absent-mindedness or senile confusion. Therapy *can* be continuous on a daily dose of only one Geroniazol TT tablet every 12 hours.

The gradual release of nicotinic acid in Geroniazol TT will provide the well-known peripheral vasodilatation needed in patients with deficient circulation and with a minimum amount (if any) of "flushing." Also, cerebrovascular circulation is complemented by pentylenetetrazol, long-established as a cerebral and respiratory stimulant.

Geroniazol TT improves the typical, unfortunate, signs of senile confusion. Patients become more alert,

ged and debilitated

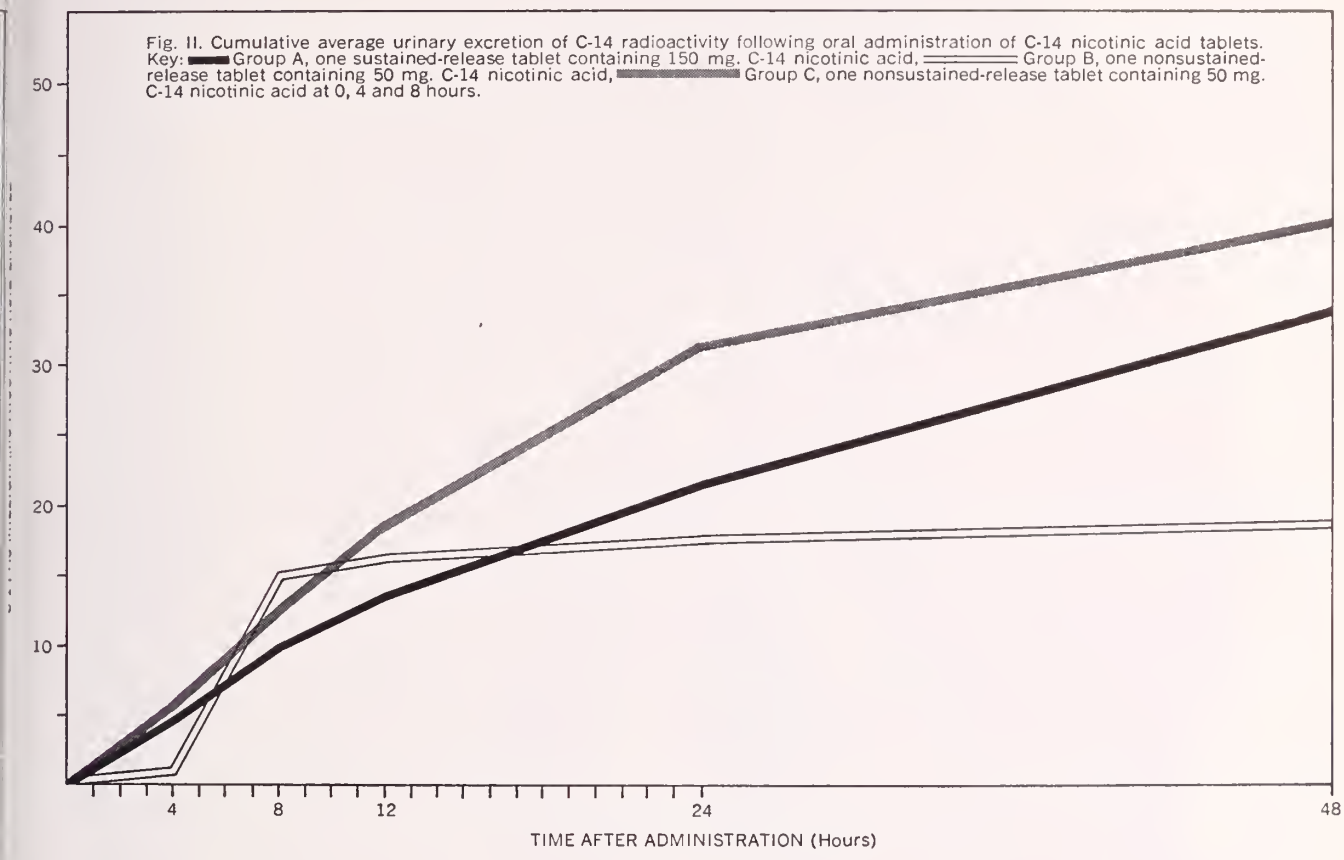


Fig. II. Cumulative average urinary excretion of C-14 radioactivity following oral administration of C-14 nicotinic acid tablets. Key: ▬ Group A, one sustained-release tablet containing 150 mg. C-14 nicotinic acid, ═══ Group B, one nonsustained-release tablet containing 50 mg. C-14 nicotinic acid, ▬ Group C, one nonsustained-release tablet containing 50 mg. C-14 nicotinic acid at 0, 4 and 8 hours.

ess confused and moody. Personal care, memory, emotional stability, social attention improve. Fatigue, apathy and irritability are reduced.

A prescription for 100 tablets of Geroniazol TT will permit your patients to enjoy the benefits of time-prolonged nicotinic acid/pentylenetetrazol therapy, at an economical price. Dosage is only one tablet every 12 hours.

Contraindications: There are no known contraindications.

Precautions: Exercise caution when treating patients with a low convulsive threshold.

Side Effects: Side effects are rarely encountered, however due to the vasodilatation effect of nicotinic acid, transitory mild nausea, flushing, tingling and pruritus are possible.

Dosage: One tablet every 12 hours.

Supplied: Prescribe bottles of 100 tablets, to take advantage of recent price reduction.

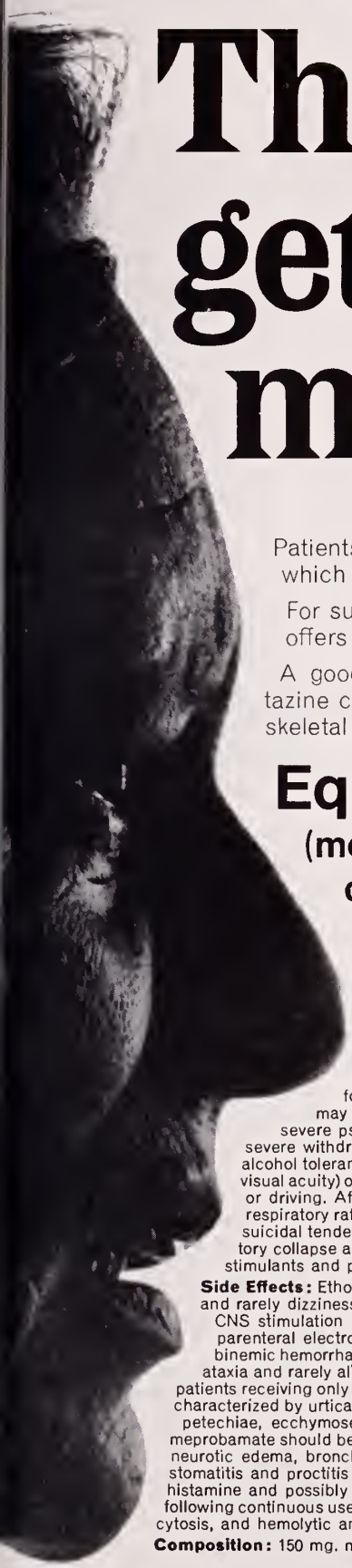
References: 1. Report by Nuclear Science & Engineering Corp., Pittsburgh, Pa., in files of Philips Roxane Laboratories. 2. Connolly, R.: W. Virginia Med. J. *56*:263 (Aug.) 1960. 3. Curran, T. R., and Phelps, D. K.: Am. Pract. & Digest Treat. *11*:617 (July) 1960.

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Geroniazol® TT

nicotinic acid 150 mg., pentylenetetrazol 300 mg.
Tempotrol® Time Controlled Tablet





This pain is getting on my nerves.

Patients in pain often experience concomitant anxiety and tension, which may add to the burden of pain.

For such patients, you may want to prescribe a preparation that offers more than simple analgesia.

A good choice is often EQUAGESIC® (meprobamate and ethoheptazine citrate with aspirin). It helps relieve pain. And anxiety. And skeletal muscle spasm as related to pain or anxiety and tension.

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(meprobamate and ethoheptazine citrate with aspirin)

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Contraindications: History of sensitivity or severe intolerance to aspirin or meprobamate.

Warnings: USE IN PREGNANCY: Safety for use during pregnancy or lactation has not been established; therefore it should be used in pregnant patients or women of child-bearing age only when the physician judges its use essential to the patient's welfare.

Precautions: Keep out of reach of children. Not recommended for patients 12 years old or less. Carefully supervise dose and amounts prescribed, especially for patients prone to overdose themselves. Excessive prolonged use of meprobamate may result in dependence or habituation in susceptible persons—as alcoholics, ex-addicts, severe psychoneurotics. Withdraw gradually after prolonged high dosage to avoid possibly severe withdrawal reactions including epileptiform seizures. Warn patients of possible reduced alcohol tolerance. If drowsiness, ataxia or visual disturbances (impairment of accommodation and visual acuity) occur, reduce dose. If symptoms persist, caution patients against operating machinery or driving. After meprobamate overdose, prompt sleep, reduction of blood pressure, pulse and respiratory rates to basal levels, and hyperventilation are reported. Give cautiously to patients with suicidal tendencies. Treat attempted suicide (has resulted in coma, shock, vasomotor and respiratory collapse and anuria) with immediate gastric lavage and appropriate supportive therapy (CNS stimulants and pressor amines as indicated).

Side Effects: Ethoheptazine and aspirin may occasionally cause nausea, vomiting, epigastric distress, and rarely dizziness. Overdosage may result in CNS depression (drowsiness and lightheadedness) or CNS stimulation and salicylate intoxication (requires induced vomiting or gastric lavage, specific parenteral electrolyte therapy for ketoacidosis and dehydration, and observation for hypoprothrombinemic hemorrhage [usually requires whole blood transfusions]). Meprobamate may cause drowsiness, ataxia and rarely allergic or idiosyncratic reactions. These reactions, sometimes severe, can develop in patients receiving only 1 to 4 doses who have had no previous contact with meprobamate. Mild reactions are characterized by urticarial or erythematous maculopapular rash. Acute nonthrombocytopenic purpura with petechiae, ecchymoses, peripheral edema and fever have been reported. If allergic reaction occurs, meprobamate should be stopped and not reinstituted. Severe reactions, observed very rarely, include angioneurotic edema, bronchial spasms, fever, fainting spells, hypotensive crises (1 fatal case), anaphylaxis, stomatitis and proctitis (1 case) and hyperthermia. Treat symptomatically such as with epinephrine, antihistamine and possibly hydrocortisone. A few cases of leucopenia, usually transient, have been reported following continuous use. Rarely, cases of aplastic anemia (1 fatal case), thrombocytopenic purpura, agranulocytosis, and hemolytic anemia have been reported; almost always, in the presence of known toxic agents.

Composition: 150 mg. meprobamate, 75 mg. ethoheptazine citrate and 250 mg. aspirin per tablet.

Wyeth Laboratories Philadelphia, Pa.

(Continued from Page xxi)
by not how well it covers advanced and technical aspects of opthalmology but rather by its success in presenting sound discussions of ophthalmologic problems seen in infants and children. The text makes no attempt to describe in detail every eye disorder that may be encountered by the pediatrician. The importance of the eye in offering clues to the presence of systemic disorders, including congenital malformations and inherited disorders, is emphasized. The editors correctly point out that a school eye examination should no longer be considered an adequate means of detecting structural or functional eye abnormalities in children. Early detection of the abnormalities is often a crucial factor in the institution of successful treatment.

The opening chapters briefly review the anatomy of embryology of the eye and are followed by a chapter containing many helpful hints and aids used in the examination of the eyes in infancy and childhood. Deserved emphasis is given to strabismus and its management and early referral of such patients is stressed. The chapter on external diseases of the eye is well done and contains an excellent discussion of infectious diseases of the conjunctiva. The chapter on ocular manifestations of systemic diseases in children contains important recent information on involvement of the eyes in metabolic diseases, chromosomal aberrations and other disorders. The chapter on special reading disabilities and that on social and emotional aspects of ophthalmologic problems are unique and should be of interest to the ophthalmologist who may not be so sensitive to these problems as is the pediatrician. The illustrations and color plates, particularly those demonstrating external diseases and ocular manifestation of systemic diseases, are quite good. There is also a glossary for those not familiar with ophthalmic terminology.

This book is not to be read from cover to cover at one sitting but should be used as a reference in relation to a specific problem. Any volume which has multiple authorship obviously has strong and weak points. However, all in all, the book achieves its objective and fills a needed place for physicians dealing with children.—*Harris D. Riley, Jr., M.D.* □

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Warning—In renal impairment, usual doses may lead to excessive accumulation and liver toxicity. Under such conditions, lower than usual doses are indicated, and, if therapy is prolonged, serum level determinations may be advisable. A photodynamic reaction to natural or artificial sunlight has been observed. Small amounts of drug and short exposure may produce an exaggerated sunburn reaction which may range from erythema to severe skin manifestations. In a smaller proportion, photoallergic reactions have been reported. Patients should avoid direct exposure to sunlight and discontinue drug at the first evidence of skin discomfort. Necessary subsequent courses of treatment with tetracyclines should be carefully observed.

Precautions—Overgrowth of nonsusceptible organisms may occur. Constant observation is essential. If new infections appear, appropriate measures should be taken. In infants, increased intracranial pressure with bulging fontanels has been observed. All signs and symptoms have disappeared rapidly upon cessation of treatment.

Side Effects—Gastrointestinal system—anorexia, nausea, vomiting, diarrhea, stomatitis, glossitis, enterocolitis, pruritus ani. Skin—maculopapular and erythematous rashes. A rare case of exfoliative dermatitis has been reported. Photosensitivity; onycholysis and discoloration of the nails (rare). Kidney—rise in BUN, apparently dose related. Hypersensitivity reactions—urticaria, angioneurotic edema, anaphylaxis. Teeth — dental staining (yellow-brown) in children of mothers given this drug during the latter half of pregnancy, and in children given the drug during the neonatal period, infancy and early childhood. Enamel hypoplasia has been seen in a few children. If adverse reaction or idiosyncrasy occurs discontinue medication and institute appropriate therapy.

Average Adult Daily Dosage: 150 mg q.i.d. or 300 mg b.i.d. Should be given 1 hour before or 2 hours after meals, since absorption is impaired by the concomitant administration of high calcium content drugs, foods and some dairy products. Treatment of streptococcal infections should continue for 10 days, even though symptoms have subsided.

Capsules: 150 mg; **Tablets:** film coated, 300 mg, 150 mg, and 75 mg of demethylchlortetracycline HCl.

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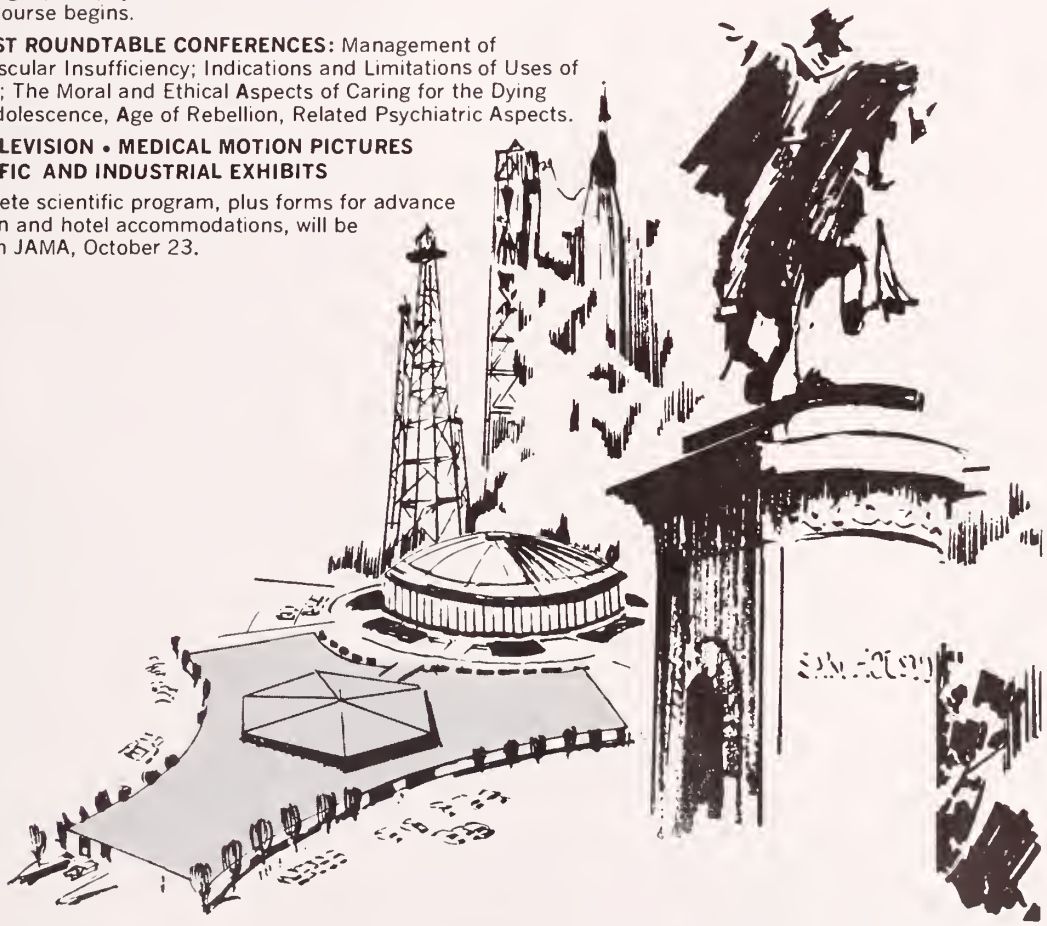
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"A steroid-nutritional compound (Mediatric) was used in 100 patients to relieve some of the symptoms caused by degenerative changes of aging...." This therapy resulted in improvement of 75 per cent of the patients.

McNeill, A. J.: Clin. Med. *8*:518 (Mar.) 1961.

The estrogen component is PREMARIN® (conjugated estrogens—equine), the orally active, natural estrogen most widely prescribed for its physiologic and metabolic benefits. The combination of estrogen and *methyltestosterone* can help maintain an anabolic balance to forestall premature estrogen-related degenerative changes.

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WARNING: Some patients with pernicious anemia may not respond to treatment with the Tablets or Capsules, nor is cessation of response predictable. Periodic examinations and laboratory studies of pernicious anemia patients are essential and recommended.

SIDE EFFECTS: In addition to withdrawal bleeding, breast tenderness or hirsutism may occur.

SUGGESTED DOSAGES: **Male and female:** 1 Tablet or Capsule, or 3 teaspoonfuls Liquid, daily or as required.

In the female: To avoid continuous stimulation of breast and uterus, cyclic therapy is recommended (3 week regimen with 1 week rest period—Withdrawal bleeding may occur during this 1 week rest period).

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New view of an oral contraceptive at work

Although suppression of ovulation remains the primary mode of action of oral contraceptives, newer knowledge indicates that products like Norinyl-1—a combination of both low-dosage progestogen and estrogen for the full treatment cycle—may provide multiple action that helps explain their unexcelled record of contraceptive effectiveness. This report explores the possible secondary protective mechanisms offered by combined hormonal administration.

Accumulating evidence has indicated that sparse, highly viscous cervical mucus has a possible adverse effect on the motility and survival of spermatozoa.

The estrogen-opposing progestational ingredient of Norinyl-1 (norethindrone 1 mg. with mestranol 0.05 mg.) changes the usual midcycle picture of a thin, watery cervical mucus. The result—a built-in barrier that appears to inhibit sperm from reaching the ovum should one be released. The inset in the adjoining photograph shows immobile spermatozoa as they appear in cervical mucus taken from a patient treated with Norinyl-1.

See last page for contraindications, precautions, side effects and dosage.

How the estrogen-opposing action of Norinyl-1 creates cervical mucus that may be hostile to sperm penetration

Normally, estrogen activity during the fertile midcycle stimulates the production of a profuse and watery cervical mucus that permits maximum sperm motility and promotes penetration.

But what happens when Norinyl-1 is administered? Its potent progestogen, norethindrone, opposes estrogen stimulation of cervical mucus. Consequently, the amount of mucus decreases and its viscosity increases. This results in a sparse but thick mucus barrier that appears to diminish the vitality of the sperm and to impair its powers of penetration.

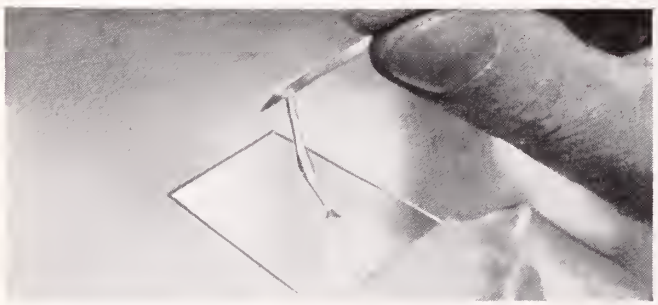
The role of viscous cervical mucus as a secondary action of Norinyl-1

In a report on 89 patients taking this medication,* cervical mucus obtained from cycle day 5 to cycle day 29 appeared scant and thick and exhibited little or no Spinnbarkeit.

In the opinion of this investigator, the effect on cervical mucus may be sufficient to prevent conception.

*Cohen, M. R.: Symposium: Mechanisms of Action of Low Dosage Oral Contraceptive, Yale University Medical Center, New Haven, Conn., April 6, 1967.

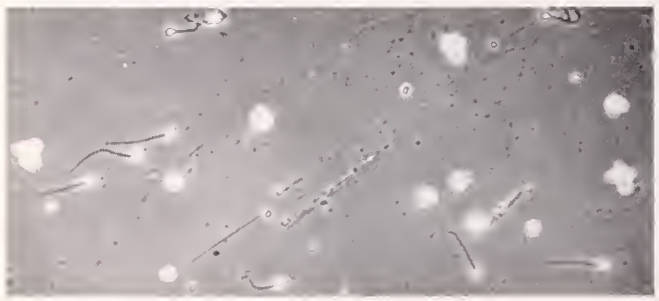
Normal cervical mucus at midcycle in untreated patient is known to permit sperm motility... promote sperm penetration.



Cervical mucus is thin and watery with a stretchability (Spinnbarkeit) of 15 to 20 cm.



Thin, watery mucus crystallizes into this well-defined, fernlike pattern within a minute.

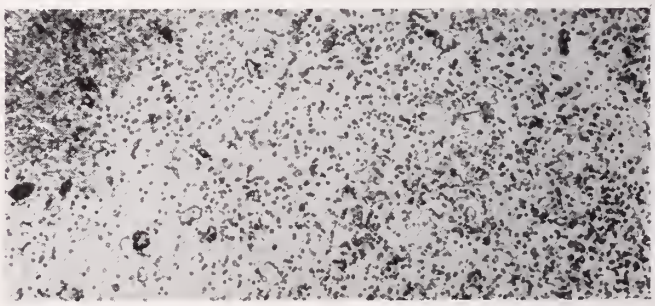


Spermatozoa appear healthy, are active and freemoving.

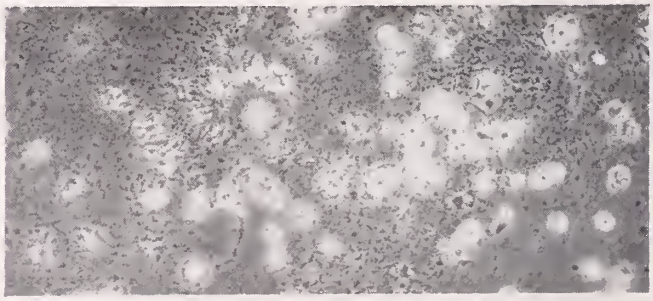
Viscous cervical mucus at midcycle produced by Norinyl-1 appears to impair sperm vitality... inhibit penetration.



Cervical mucus is scanty, thick and viscous. Spinnbarkeit is 1 cm. or less.



In thick, viscous cervical mucus the fern pattern is poorly defined or absent.



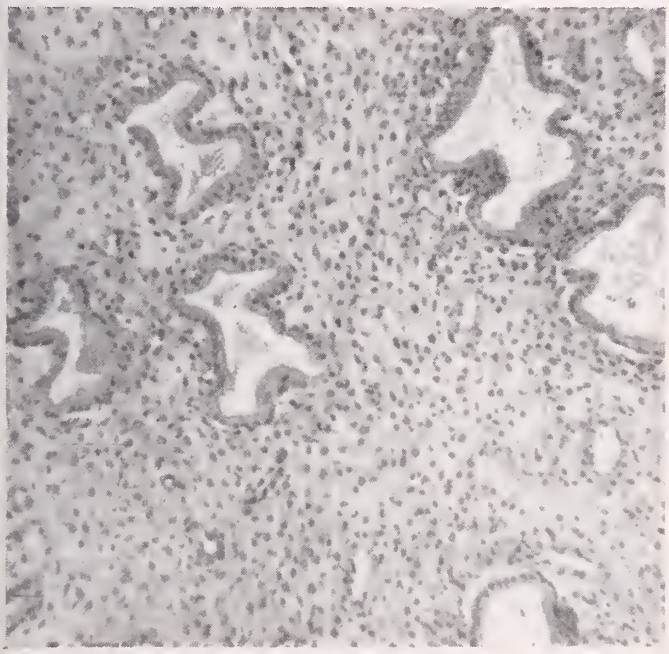
Immobile spermatozoa as they appear in cervical mucus taken from a patient treated with Norinyl-1.

How Norinyl-1 alters normal endometrial responses—another possible protective mechanism

Let us suppose that an ovum is released—as occurs in an occasional, rare case—and somehow a sperm succeeds in penetrating the cervical mucus barrier. Should this come about, one additional action of Norinyl-1 may protect the patient from unwanted pregnancy. The theory is that progestogen intake makes endometrial tissue unreceptive to implantation.

Endometrium of untreated patient

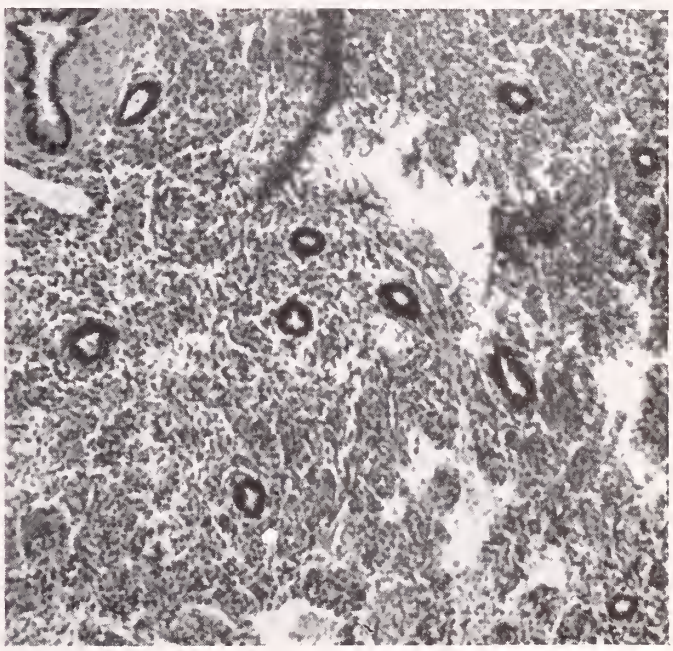




Normally, the endometrium progresses through a proliferative phase stimulated by estrogen and a secretory phase stimulated by progesterone. During the secretory phase the endometrium is receptive to the fertilized ovum.

Endometrium produced by Norinyl-1





When Norinyl-1 is administered its progestogen component—norethindrone—accelerates the secretory phase and suppresses glandular and vascular development.

new Norinyl-1® tablets
(norethindrone 1mg. & mestranol 0.05mg.)

See last page for contraindications, precautions, side effects and dosage.

effective fertility control
on half the previous dosage

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Reduction of oral contraceptive dosage to lowest effective levels has become a well-accepted principle of conservative medical practice. In keeping with this view, Norinyl is now available in a new strength in which *both* norethindrone and mestranol are reduced 50 percent. Studies show that Norinyl-1 achieves fertility control with only 1.05 mg. of combined progestogen and estrogen per tablet.

Norethindrone was first reported for use as a progestational agent in human beings in 1955. Norethindrone 2 mg. with mestranol 0.1 mg., as an oral contraceptive, is currently in use by over 2,000,000 women. Clinical experience now establishes that Norinyl-1 also amply meets the criteria of reliability and safety.*

*Symposium on Low-Dosage Oral Contraception, Palo Alto, Calif., July 15, 1965.

PRESCRIBING INFORMATION

Contraindications: 1. Patients with thrombophlebitis or with a history of thrombophlebitis or pulmonary embolism. 2. Liver dysfunction or disease. 3. Patients with known or suspected carcinoma of the breast or genital organs. 4. Undiagnosed vaginal bleeding.

Warnings: 1. Discontinue medication pending examination if there is sudden partial or complete loss of vision or if there is a sudden onset of proptosis, diplopia, or migraine. If examination reveals papilledema or retinal vascular lesions, medication should be withdrawn. 2. Since the safety of Norinyl-1 in pregnancy has not been demonstrated, it is recommended that for any patient who has missed two consecutive periods, pregnancy should be ruled out before continuing the contraceptive regimen. If the patient has not adhered to the prescribed schedule, the possibility of pregnancy should be considered at the time of the first missed period. 3. Detectable amounts of the active ingredients in oral contraceptives have been identified in the milk of mothers receiving these drugs. The significance of this dose to the infant has not been determined.

Precautions: 1. The pretreatment physical examination should include special reference to breast and pelvic organs, as well as a Papanicolaou smear. 2. Endocrine and possibly liver function tests may be affected by treatment with Norinyl-1. Therefore, if such tests are abnormal in a patient taking Norinyl-1, it is recommended that they be repeated after the drug has been withdrawn for 2 months. 3. Under the influence of estrogen-progestogen preparations, preexisting uterine fibroids may increase in size. 4. Because these agents may cause some degree of fluid retention, conditions that may be influenced by this factor, such as epilepsy, migraine, asthma, cardiac, or renal dysfunction, require careful observation. 5. Although a cause and effect relationship has not been established, Norinyl-1 should be used with caution in patients with a history of cerebrovascular accident. 6. In relation to breakthrough bleeding, as in all cases of irregular bleeding per vaginam, nonfunctional causes should be borne in mind. In cases of undiagnosed vaginal bleeding, adequate diagnostic measures are indicated. 7. Patients with a history of psychic depression should be carefully observed and the drug discontinued if the depression recurs to a serious degree. 8. Any possible influence of prolonged Norinyl-1 therapy on pituitary, ovarian, adrenal, hepatic or uterine function awaits further study. 9. A decrease in glucose tolerance has been observed in a small percentage of patients on oral contraceptives. The mechanism of this decrease is obscure. For this reason, diabetic patients should be carefully observed while receiving Norinyl-1 therapy. 10. Because of the occasional occurrence of thrombophlebitis and pulmonary embolism in patients taking oral contraceptives, the physician should be alert to the earliest manifestations of the disease. A cause and effect relationship has not been demonstrated. 11. Because of the effects of estrogens on epiphyseal closure, Norinyl-1 should be used judiciously in young patients in whom bone growth is not complete. 12. The age of the patient constitutes no absolute limiting factor, although treatment with Norinyl-1 may mask the onset of the climacteric. 13. The pathologist should be advised of Norinyl-1 therapy when relevant specimens are submitted.

Side Effects: The following adverse reactions have been observed with varying incidence in patients receiving oral contraceptives: nausea, vomiting, gastrointestinal symptoms, breakthrough bleeding, spotting, change in menstrual flow, amenorrhea, edema, chloasma, breast changes (tenderness, enlargement and secretion), loss of scalp hair, change in weight (increase or decrease), changes in cervical erosion and cervical secretions, suppression of lactation when given immediately postpartum, cholestatic jaundice, erythema multiforme, erythema nodosum, hemorrhagic eruption, migraine, rash (allergic), itching, rise in blood pressure in susceptible individuals, mental depression.

The following occurrences have been observed in users of oral contraceptives. A cause and effect relationship has not been established: thrombophlebitis, pulmonary embolism, neuroocular lesions.

The following laboratory results may be altered by the use of oral contraceptives: increased bromsulphalein retention and other hepatic function tests, coagulation tests (increase in prothrombin, factors VII, VIII, IX and X), thyroid function (increase in PBI and butanol extractable protein-bound iodine and decrease in T^3 values), metapyrone test, pregnanediol determination.

Other side effects reported to have occurred in association with use of this drug are dizziness, hirsutism, pains in legs, back, chest and abdomen, dysuria, drowsiness, vaginal discharge, libido increased and decreased, eruptions, hypermenorrhea, hypomenorrhea, increased appetite, G.U. infections, varicose veins, abdominal fullness, acne, headache, nervousness, allergies, blurred vision, pain in eyes, and itching in eyes. *For complete clinical data, see package insert.*

Dosage and Administration: 1. One tablet of Norinyl-1 is administered orally for 20 days beginning on day 5 of the menstrual cycle. (Count day 1 of the cycle as the first day of menstrual bleeding.) Repeat this dosage schedule for each cycle. 2. If no menstrual period occurs after a cycle of treatment (20 tablets) in which patient adhered to the schedule, the patient must be instructed to resume taking the Norinyl-1 tablets 7 days after the previous 20-day course was completed. For example, if the last pill of a previous cycle had been taken on a Sunday, then a new cycle of treatment should begin on the following Sunday. 3. In the postpartum woman, it is recommended that the first cycle of treatment should begin on day 5 of the first menstrual cycle. However, Norinyl-1 should not be administered during lactation.

Availability: Norinyl-1 (norethindrone 1 mg. with mestranol 0.05 mg.)—Dispensers of 20 and 60 and bottles of 250 tablets.

norethindrone — an original steroid from

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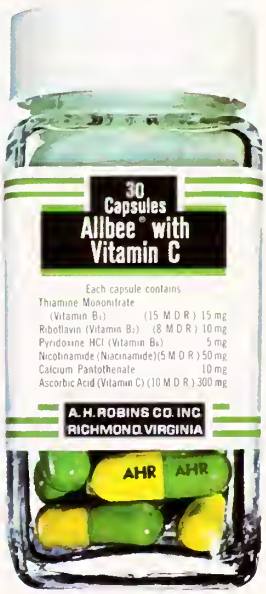
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atropine sulfate	0.0194 mg.	0.0582 mg.
hysocine hydrobromide	0.0065 mg.	0.0195 mg.
phenobarbital	(¼ gr.) 16.2 mg.	(¾ gr.) 48.6 mg.

(Warning: may be habit forming)

Brief summary. Blurring of vision, dry mouth, difficult urination, and flushing or dryness of the skin may occur on higher dosage levels, rarely on usual dosage. Administer with caution to patients with incipient glaucoma or urinary bladder neck obstruction. Contraindicated in acute glaucoma, advanced renal or hepatic disease or a hypersensitivity to any of the ingredients.

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October 24th

"Coronary Artery Disease"
Thunderbird Motel
Miami

November 7th

"Respiratory Infections"
Quo Vadis Motor Hotel
Ponca City

November 14th

"Psychiatric Tools for Everyday Practice"
Lawton Golf & Country Club
Lawton

November 21st

"Coronary Artery Disease"
Quality Courts Motel
Edmond

removes the mental blur

that clouds vision

SOLFOTON®

Each tablet or capsule contains
PHENOBARBITAL . . . . . 16 mg.
(Warning: may be habit forming)
BENSULFOID® (See P D R) . . . . . 65 mg.
Precaution: same as 16 mg. of phenobarbital



Constructive Therapy

A Solfoton tablet or capsule at 6 hour intervals maintains sedation at the threshold of calmness, sustaining a mental climate for purposeful living.

Literature and clinical samples sent upon request.

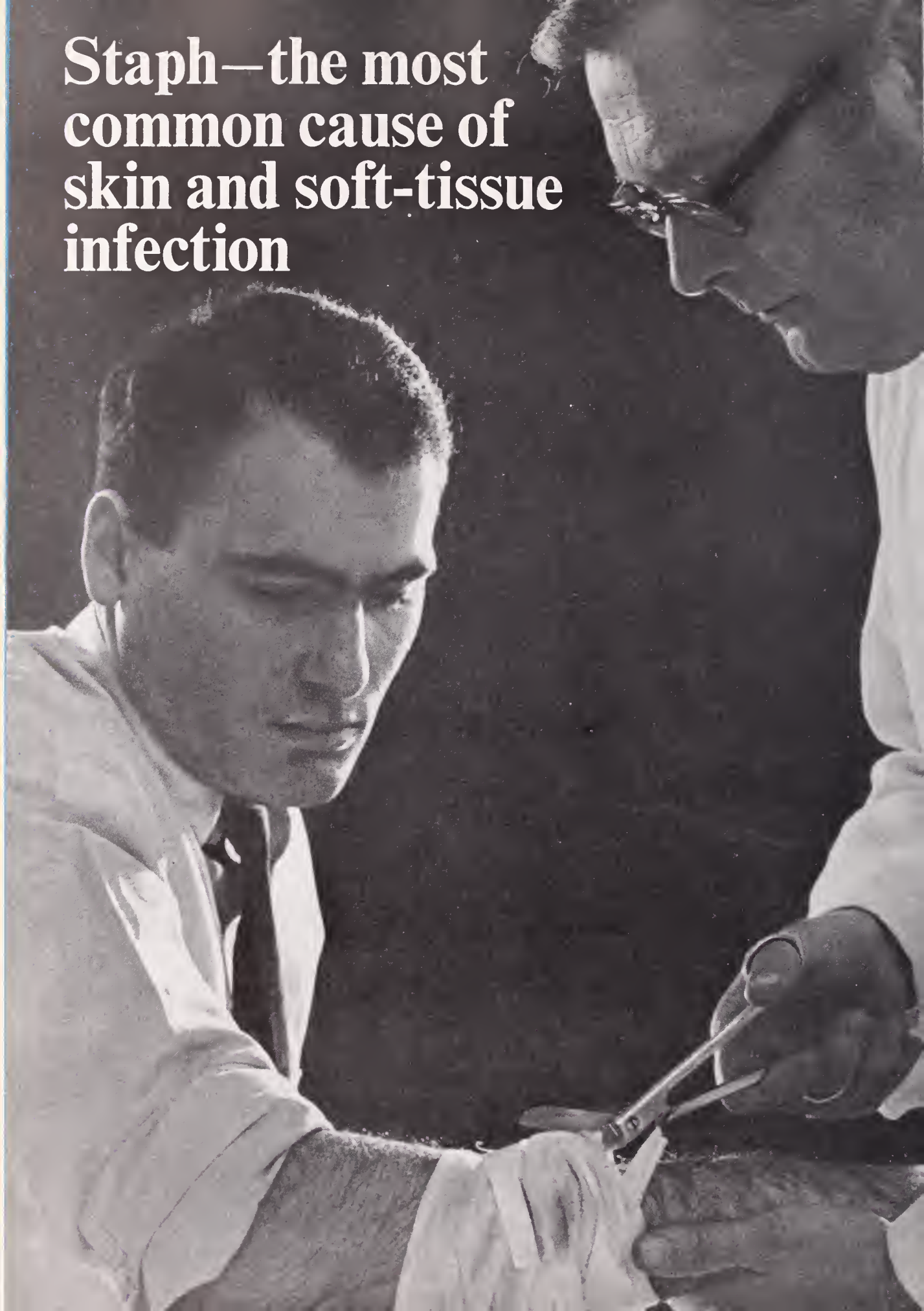
FEDERAL LAW PROHIBITS DISPENSING WITHOUT PRESCRIPTION

AVAILABLE

Solfoton *(yellow, uncoated tablets "P")*
100s, 500s, 5000s
Solfoton Capsules *(yellow and brown)*
100s, 500s, 1000s
Solfoton S/C *(sugar-coated beige tablets)*
100s, 500s, 4000s

WM. P. POYTHRESS & CO., INC.
RICHMOND, VIRGINIA 23217
Manufacturers of ethical pharmaceuticals since 1856

Staph—the most common cause of skin and soft-tissue infection



.reliably controlled with specific therapy



A suitable dosage form for every staph situation

Staph—the most common cause of skin and soft-tissue infection—also is responsible for many more serious infections, such as pneumonia, osteomyelitis, and septicemia. Often, a seemingly minor skin infection is the source of metastatic spread to deeper structures. When findings on culture incriminate staph as the cause, Prostaphlin (sodium oxacillin) will provide specific effective therapy.

Bactericidal effectiveness. Hardly a staph organism can resist the bactericidal action of Prostaphlin (sodium oxacillin), as shown by a 34-month *in vitro* study. Of all staph isolates tested, 99.5% were sensitive to oxacillin.[1]

Clinically proven. There is a high correlation between these *in vitro* findings and clinical results. Of 610 patients treated with Prostaphlin (sodium oxacillin), 89.8% were reported cured or improved, including those with staph infections resistant to penicillin G.[2] And since resistance does not appear to develop *in vivo*, therapy with oxacillin can be extended when necessary.

Outstanding safety record. Besides being staph-specific and rapidly absorbed—Prostaphlin (sodium oxacillin) has established an outstanding record of safety during five years of widespread clinical use. Continuous high blood levels of oxacillin have not produced toxic effects on kidney function, assuring a significant margin of safety. However, as with all penicillins, the possibility of allergic response should be considered.

Capsules, Oral Solution and Injectable. Prostaphlin (sodium oxacillin) is available in three flexible dosage forms to suit the age of the patient and severity of infection—capsules, an oral solution for pediatric use, and multi-dose vials for injection, I.M. or I.V.

PRESCRIBING INFORMATION: For complete information, consult Official Package Circular. *Indications:* Infections caused by Staphylococci, particularly those due to penicillin G-resistant Staphylococci. *Contraindications:* A history of severe allergic reactions to penicillin. *Precautions:* Typical penicillin-allergic reactions may occur. Safety for use in pregnancy and premature infants is not established. Because of limited experience, use cautiously and evaluate organ system function frequently in neonates. Mycotic or bacterial superinfections may occur. Assess renal, hematopoietic and hepatic function intermittently during long-term therapy. *Adverse Reactions:* Skin rashes, pruritus, urticaria, eosinophilia, nausea, vomiting, diarrhea, fever and occasional anaphylaxis. Rare cases of reversible hepatocellular dysfunction have occurred. Moderate SGOT elevations have been noted. Thrombophlebitis has occurred occasionally during intravenous therapy and leukopenia was noted in two cases. *Usual Oral Dosage:* Adults: 500 mg. *q.*4 or *q.6h.* Children: 50 mg./Kg./day. *Usual Parenteral Dosage:* Adults: 250-500 mg. *q.*4 or *q.6h.* Children: 50 mg./Kg./day. Treat beta-hemolytic streptococcal infections for at least 10 days. Give oral drug 1 to 2 hours before meals. *Supplied:* Capsules—250 and 500 mg. in bottles of 48. Injectable—250 mg., 500 mg., and 1 Gm. dry filled vial for I.M./I.V. use. For Oral Solution—100 ml. bottle, 250 mg./5 ml. when reconstituted. **A.H.F.S. CATEGORY 8:12.16**

References: 1. Abstracted from *Antibiotic Sensitivity of Staphylococci Studied from November 1962 through August 1965,* reported by Griffith, L.J., Staphylococcus Reference Laboratory, V.A. Hospital, Batavia, N.Y. 2. Data on file, Bristol Laboratories.

BRISTOL

BRISTOL LABORATORIES/Division of Bristol-Myers Co., Syracuse, N.Y.

Whenever you suspect staph

PROSTAPHLIN®

SODIUM OXACILLIN

when bursitis hits a 280-lb. tackle,

hit back with Butazolidin alka



Indications: Osteoarthritis, rheumatoid arthritis, rheumatoid spondylitis, psoriatic arthritis, acute gout, painful shoulder (peritendinitis, capsulitis, bursitis and acute arthritis of that joint), acute superficial thrombophlebitis.

Contraindications: Edema; danger of cardiac decompensation; history or symptoms of peptic ulcer; renal, hepatic or cardiac damage; history of drug allergy; history of blood dyscrasia. The drug should not be given when the patient is senile or when other potent drugs are given concurrently. Large doses of Butazolidin alka are contraindicated in glaucoma.

Warning: If coumarin-type anticoagulants are given simultaneously, watch for excessive increase in prothrombin time. Instances of severe bleeding have occurred. Pyrazole compounds may potentiate the pharmacologic action of sulfonylurea, sulfonamide-type agents and insulin. Carefully observe patients receiving such therapy. Use with great caution in the first trimester of pregnancy.

Precautions: Before prescribing, carefully select patients, avoiding those responsive to routine measures as well as contraindicated patients. Obtain a detailed history and a complete physical and laboratory examination, including a blood count. The patient should not exceed recommended dosage, should be closely supervised and should be warned to discontinue the drug and report immediately if fever, sore throat, or mouth lesions (symptoms of blood dyscrasia); sudden weight gain (water retention); skin reactions; black or tarry stools or other evidence of intestinal hemorrhage occur. Make regular blood counts. Discontinue the drug immediately and institute countermeasures if the white count changes significantly, granulocytes decrease, or immature forms appear. Use greater care in the elderly and in hypertensives.

Adverse Reactions: The most common are nausea, edema and drug rash. Swelling of the ankles or face may be minimized by withholding dietary salt, reduction in dosage or use of diuretics. In elderly patients and in those with hypertension the drug should be discontinued with the appearance of edema. The drug has been associated with peptic ul-

BU-4686

For 280-lb. tackles—or 108-lb. housewives—Butazolidin alka can hasten recovery from the agonizing pain of shoulder bursitis.

It's not for every patient. Check carefully the Contraindications, Warning and Precautions shown below.

And adverse reactions may occur. The most common are nausea, edema and rash. Rarely, agranulocytosis has been reported. All adverse reactions are listed below, too.

Play-for-pay or workaday patients—when they come up with shoulder bursitis and your clinical judgment indicates Butazolidin alka—go with it.

And watch the comeback.



cer and may reactivate a latent peptic ulcer. The patient should be instructed to take doses immediately before or after meals or with milk to minimize gastric upset. Mild drug rashes frequently subside with reduction of dosage. However, rash accompanied by fever or other systemic reactions usually requires withholding medication. Purpuric rash has also been reported. Agranulocytosis, exfoliative dermatitis, Stevens-Johnson syndrome, or a generalized allergic reaction similar to serum sickness may occur and require permanent withdrawal of medication. Stomatitis, salivary gland enlargement, vomiting, vertigo and languor may occur. Leukemia and leukemoid reactions have been reported. While not definitely attributable to the drug, a causal relationship cannot be excluded. Thrombocytopenic purpura and aplastic anemia may occur. Confusional states, agitation, headache, blurred vision, optic neuritis and transient hearing loss have been reported, as have hyperglycemia, hepatitis, jaundice, and several cases of anuria and hematuria. With long-term use, reversible thyroid hyperplasia may occur infrequently. Moderate lowering of the red cell count due to hemodilution may occur. 6509-V(B)R2

Butazolidin® alka

Capsules

100 mg. phenylbutazone
100 mg. dried aluminum hydroxide gel
150 mg. magnesium trisilicate
1.25 mg. homatropine methylbromide

Dosage in painful shoulder: Initial: 3 to 6 capsules daily in 3 or 4 equal doses. Trial period: 1 week. Maintenance dosage should not exceed 4 capsules daily; response is often achieved with 1 or 2 capsules daily.

For complete details, please see full prescribing information.

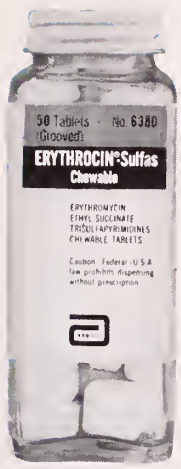
Geigy Pharmaceuticals
Division of Geigy Chemical Corporation, Ardsley, New York

Geigy



Perhaps there have been times when you wanted to prescribe erythromycin and triple sulfas for little patients. Now you can—with a choice of two new fine-tasting pediatric forms.

New–Two Pediatric Forms of Erythromycin and Triple Sulfas





ERYTHROCIN®-SULFAS Chewable (Erythromycin ethyl succinate-trisulfapyrimidines chewable tablet)

In clinical trials[1,2], this orange-flavored tablet was given to 55 patients, aged four months to 18 years.

Diagnoses (multiple in some cases) represented a cross section of bacterial infections commonly seen in pediatric office practice.

Therapy was given from three to 12 days, with an average of six days.

Of the 55 patients, 30 were reported cured within 72 hours, while 22 showed partial recovery within the same time, and subsequent clinical cure.

A clinical cure rate of 94.5%

ERYTHROCIN®-SULFAS Granules (Erythromycin ethyl succinate-trisulfapyrimidines granules for oral suspension)

87 patients were treated[1,2]—all children, ages four months to 15 years.

The diagnoses were multiple in some cases and were chiefly bacterial infections of the respiratory tract.

Dosage was maintained from three to 10 days; average treatment was five days. All of the ill children accepted the orange-flavored suspension favorably.

53 were clinically cured within 72 hours, while 32 showed partial relief within the same time, and subsequent clinical cure.

701358

A clinical cure rate of 97.7%

1. Case Reports on File, Dept. Clin. Development, Abbott Laboratories.
2. Polley, R.F.L., Use of Erythromycin-Sulfas in Office Practice, Western Med., 7:177, July, 1966.

ABBOTT

Brief Summary on next page

ERYTHROCIN®-SULFAS
Brief Summary

Contraindications: Known sensitivity to erythromycin or sulfonamides. Because of the possibility of kernicterus with sulfonamides, do not use in pregnancy at term, premature or newborn infants.

Warnings: As with other forms of sulfonamide therapy, carefully evaluate patients with liver or kidney damage, urinary obstruction, or blood dyscrasia. Deaths have been reported from hypersensitivity reactions and blood dyscrasias following use of sulfonamides. Perform blood counts and liver and kidney function tests if used repeatedly at close intervals or for long periods.

Precautions, Side Effects: Occasionally mild abdominal discomfort, nausea or vomiting may occur with erythromycin, generally controlled by reduction of dosage. Mild allergic reactions (such as urticaria and other skin rashes) may occur. Serious allergic reactions have been extremely infrequent. Use sulfonamides with caution in patients with a history of allergy. Assure adequate fluid intake to prevent crystalluria and institute alkali therapy if indicated. If overgrowth of nonsusceptible organisms occurs, withdraw the drug and institute appropriate treatment. If a patient should show signs of hypersensitivity, appropriate countermeasures (e.g. epinephrine, steriods, etc.) should be administered and the drug withdrawn.

Adverse Reactions: Sulfonamide therapy may be associated with headache, nausea, vomiting, urticaria, diarrhea, hepatitis, pancreatitis, blood dyscrasias, neuropathy, drug fever, skin rash, injection of the conjunctiva and sclera, petechiae, purpura, hematuria and crystalluria.

Side effects due to erythromycin are infrequent, but occasional abdominal discomfort, nausea, or vomiting, urticaria and other skin rashes may occur.

Supplied: The Granules for Oral Suspension come in bottles of 60 ml. and 150 ml. The Chewable tablets are in bottles of 50. Each 5-ml. teaspoonful of reconstituted Granules or each Chewable tablet provides erythromycin ethyl succinate equivalent to 125 mg. of erythromycin activity and 167 mg. of each of sulfadiazine, sulfamerazine and sulfamethazine.

ABBOTT

701358

In Obesity,
anorectic action with fewer unwanted side effects



CYDRIL®
(levamfetamine succinate TUTAG)



Cydril at 2 p.m. Appetite control at 6 Sleep at 10

Action and Uses: Cydril (levamfetamine succinate) is a chemopharmaceutical approach to aid the obstinately obese. Cydril (levamfetamine succinate) provides the appetite depressant action of amphetamines but exhibits fewer unwanted side reactions.

Dosage: Adults and 'teenagers', one (1) Cydril (levamfetamine succinate) Granucap* daily.

Side Effects: Occasionally cardiovascular and gastrointestinal reactions may produce dry mouth, metallic taste, anorexia, nausea, diarrhea, headache, chilliness, pallor or flushing, sweating, diuresis, and arrhythmias.

Contraindications: Cydril (levamfetamine succinate) should not be used in the presence of severe hypertension, angina pectoris, hyperthyroidism, and Raynaud's disease.

*Granucap is the Tutag brand of sustained release capsule manufactured to release the contents over a period of approximately 6 to 10 hours.

Caution: Federal law prohibits dispensing without prescription.

Full product information available on request or see page 1122 in your 1967 PDR.

For more about CYDRIL and the Cydril Family of Products ask the Man from Tutag (or your colleagues)

S. J. TUTAG & CO. ETHICAL PHARMACEUTICALS
DETROIT, MICHIGAN 48234



in digestive disorders:

B and C vitamins aid therapy. Nausea, vomiting, and severe diarrhea may seriously interfere with the digestion and absorption of nutrients. STRESSCAPS capsules, containing therapeutic quantities of vitamins B and C, may help meet the needs of these patients. In digestive disorders, as in many stress conditions, STRESSCAPS vitamins aid therapy.



Stresscaps®

Stress Formula Vitamins Lederle

FOR PROFESSIONAL RECOMMENDATION ONLY

Each capsule contains:

Vitamin B_1 (as Thiamine Mononitrate)	10 mg
Vitamin B_2 (Riboflavin)	10 mg
Vitamin B_6 (Pyridoxine HCl)	2 mg
Vitamin B_{12} Crystalline	4 mcgm
Vitamin C (Ascorbic Acid)	300 mg
Niacinamide	100 mg
Calcium Pantothenate	20 mg

Recommended intake: Adults, 1 capsule daily, for the treatment of vitamin deficiencies. Supplied in decorative "reminder" jars of 30 and 100; bottles of 500.

LEDERLE LABORATORIES, A Division of American Cyanamid Company, Pearl River, New York

692—6—3943

Lederle

Winthrop

announces

a breakthrough in the control of pain

Talwin®

brand of

pentazocine

(as lactate)

a potent, injectable non-narcotic

For every physician who has ever prescribed morphine

Talwin is the new potent non-narcotic injectable analgesic which is indicated for relief of all types and degrees of pain in acute and chronic disorders. Talwin 30 mg. is usually as effective an analgesic as morphine 10 mg. or meperidine 75 to 100 mg., but needs no narcotics controls. The duration of action of Talwin may sometimes be less than that of morphine.

Talwin is relatively free from adverse effects of morphine, such as constipation, urinary retention, or severe respiratory depression.

It has been used, in varying dosages, in over 12,000 patients for relief of pain of medical disorders, of active labor and postoperative pain; also for preoperative or preanesthetic medication, and as an adjunct to anesthesia.

A brochure incorporating analyzed information on Talwin is available. The completeness of the information will permit you to evaluate the role Talwin can play in your practice.

You can depend on Talwin to relieve pain:

WHATEVER the intensity of the pain
the cause of the pain
the site* of the pain
the duration of the pain
the chronicity of the pain
the age† of the patient

Talwin does not require a narcotics prescription

The World Health Organization Expert Committee on Dependence-Producing Drugs concluded that "...there was no need at this time for narcotics control of pentazocine [Talwin] internationally or nationally." (*WHO Tech. Rep. Ser.*, No. 343, 1966, p. 6.)

It is our sincere belief that the discovery of Talwin by Winthrop Laboratories will be of great value to you and your patients for whom you may have to prescribe a potent analgesic.

*Talwin should not be used for patients with increased intracranial pressure, head injury or pathologic brain conditions.

†Until sufficient experience is gained, it should not be administered to children under 12 years of age.

Talwin—brand of pentazocine (as lactate)

Contraindications: *Increased Intraeranial Pressure, Head Injury, or Pathologie Brain Conditions in which elouding of sensorium is undesirable.* Talwin (brand of pentazocine) should not be administered in these cases, since drug-induced sedation, dizziness, nausea, or respiratory depression could be misleading.

Preeautions: *Pregnaney.* No teratogenic or embryotoxic effects attributable to the use of Talwin have been seen in extensive reproductive studies in animals; however, like all new drugs, Talwin should be given with caution to pregnant women. A large number of patients in labor have received the drug with no adverse reactions other than those that occur with commonly used strong analgesics. However, as with other strong analgesics, Talwin should be used with caution in women delivering premature infants.

Ambulatory Patients. Since sedation, dizziness, and occasional euphoria have been noted, ambulatory patients should be warned not to operate machinery, drive cars, or unnecessarily expose themselves to hazards.

Certain Respiratory Conditions. The possibility that Talwin (brand of pentazocine) may cause respiratory depression should be considered in treatment of patients with bronchial asthma. Talwin (brand of pentazocine) should be administered only with caution and in low dosage to patients with respiratory depression (e.g., from other medication, uremia, or severe infection), obstructive respiratory conditions, or cyanosis.

Patients Dependent on Narcoties. Because Talwin is a narcotic-antagonist, patients dependent on narcotics and receiving Talwin may occasionally experience certain withdrawal symptoms. Talwin should be given with special caution to such patients. It has been observed that some patients previously given narcotic-analgesics for one month or longer had mild withdrawal symptoms when the drug was replaced with the analgesic, Talwin. After a short period of adjustment the subjects were usually able and willing to continue taking Talwin, and relief of pain was satisfactory.

Nonaddieted Patients Reeeiving Nareoties. Symptoms believed to be indicative of antagonism to the opiate may be observed rarely with administration of Talwin to patients receiving opiates for a short time. Intolerance or untoward reactions are seldom observed after administration of Talwin to patients who have received single doses or who have had limited exposure to narcotics.

Impaired Renal or Hepatie Funetion. Although laboratory tests have not indicated that Talwin (brand of pentazocine) causes or increases renal or hepatic impairment, the drug should be administered with caution to patients with such impairment. Extensive liver disease appears to predispose to greater side effects (e.g., marked apprehension, anxiety, dizziness, sleepiness) from the usual clinical dose, and may be the result of decreased metabolism of the drug by the liver.

Myoeardial Infaretion. As with all drugs, Talwin (brand of pentazocine) should be used with caution in patients with myocardial infarction who have nausea or vomiting.

Biliary Surgery. Until further experience is gained with the effects of Talwin on the sphincter of Oddi, the drug should be used with caution in patients about to undergo surgery of the biliary tract.

Adverse Effeets: Talwin is relatively free from the undesirable side effects associated with morphine, such as constipation, urinary retention, or severe respiratory depression. Furthermore, Talwin produces less nausea, vomiting, and diaphoresis than meperidine.

In over 12,000 patients who received Talwin intramuscularly, subcutaneously, or intravenously, nausea, the most frequent adverse effect, occurred in approximately 5.0 per cent. In decreasing order of occurrence were vertigo, dizziness or lightheadedness; vomiting; and euphoria. Respiratory depression was reported as an adverse reaction in 1.0 per cent.

The incidence of each of the other adverse effects was well below 1.0 per cent: constipation, circulatory depression, diaphoresis, urinary retention, alteration in mood (nervousness, apprehension, depression, floating feeling), hypertension, sting on injection, headache, dry mouth, flushed skin including plethora, altered uterine contractions during labor, dermatitis including pruritus, dreams, paresthesia, and dyspnea occurred rarely after administration of Talwin (brand of pentazocine). Furthermore, each of the following adverse reactions occurred in less than 0.1 per cent: tachycardia, visual disturbance (blurred vision, diplopia and nystagmus), hallucinations, disorientation, weakness or faintness, muscle tremor, chills, allergic reactions including edema of the face, taste alteration, insomnia, diarrhea, cramps, and miosis; laryngospasm in one patient.

Talwin has not produced severe respiratory embarrassment in adults (never apnea), even with large amounts. A small number of newborn infants whose mothers received Talwin during labor had transient apnea. The incidence of temporary diminution in the rate or strength of uterine contractions is low after administration of Talwin, similar to that following meperidine hydrochloride. (In reporting no interference with normal labor in patients receiving Talwin, one investigator further stated that the drug may increase uterine activity.) Generally, no significant fetal heart rate change occurs.

Laboratory tests of blood and of liver and kidney functions have revealed no significant abnormalities. A minimum and probably insignificant increase in the per cent of eosinophils in peripheral blood counts and bone marrow occurred occasionally.

Talwin is well tolerated by patients with diabetes mellitus, and no changes in insulin requirements have been observed.

Dosage and Administration: *Adults, Exeluding Patients in Labor.* Average recommended single parenteral dose is 30 mg., by intramuscular, subcutaneous, or intravenous route; may be repeated every three to four hours. Pain has been relieved in most patients with not more than three doses daily. Infrequently, selected patients have received single doses as high as 60 mg. *Patients in Labor.* A single, intramuscular 30 mg. dose has been most commouly administered. An intravenous 20 mg. dose has given adequate pain relief to some patients in labor when contractions become regular, and this dose may be given two or three times at two- to three-hour intervals, as needed.

Children Under 12 Years of Age. Since clinical experience in children under twelve years of age is limited, the use of Talwin (brand of pentazocine) in this age group is not recommended.

Duration of Therapy. Patients with chronic pain who received Talwin for prolonged periods (e.g., over 300 days) experienced no withdrawal symptoms even when administration was stopped abruptly; furthermore, there was no tolerance to the analgesic effect.

CAUTION. Talwin should not be mixed in the same syringe with soluble barbiturates because precipitation will occur.

Treatment of Overdosage or Respiratory Depression. Talwin has not produced apnea or severe respiratory embarrassment in adults, even in large doses. Occasionally, however, moderate respiratory depression may occur. Means of maintaining proper oxygenation should be available in case of overdosage or respiratory depression, and methylphenidate (Ritalin®) should be administered parenterally. The usual narcotic-antagonists, such as nalorphine, are not effective respiratory stimulants for depression due to Talwin.

How Supplied: ***Ampuls of 1 ml.,*** **eontaining Talwin® (pentazocine) as laetate equivalent to 30 mg. base** and 2.8 mg. sodium chloride, in Water for Injection. **Boxes of 10, 25, and 100.**

Multiple dose vials of 10 ml., **each 1 ml. containing Talwin (pentazocine) as laetate equivalent to 30 mg. base,** 2 mg. acetone sodium bisulfite, 1.5 mg. sodium chloride, and 1 mg. methylparaben as preservative, in Water for Injection. **Boxes of 1.**

The pH of Talwin solutions is adjusted between 4 and 5 with lactic acid and sodium hydroxide.

Winthrop

Winthrop Laboratories, New York, N.Y. 10016

(1150M)

When moderate to severe anxiety strikes home...

(the agitated geriatric)

His teen-age granddaughter won't invite friends home because of his outbursts.



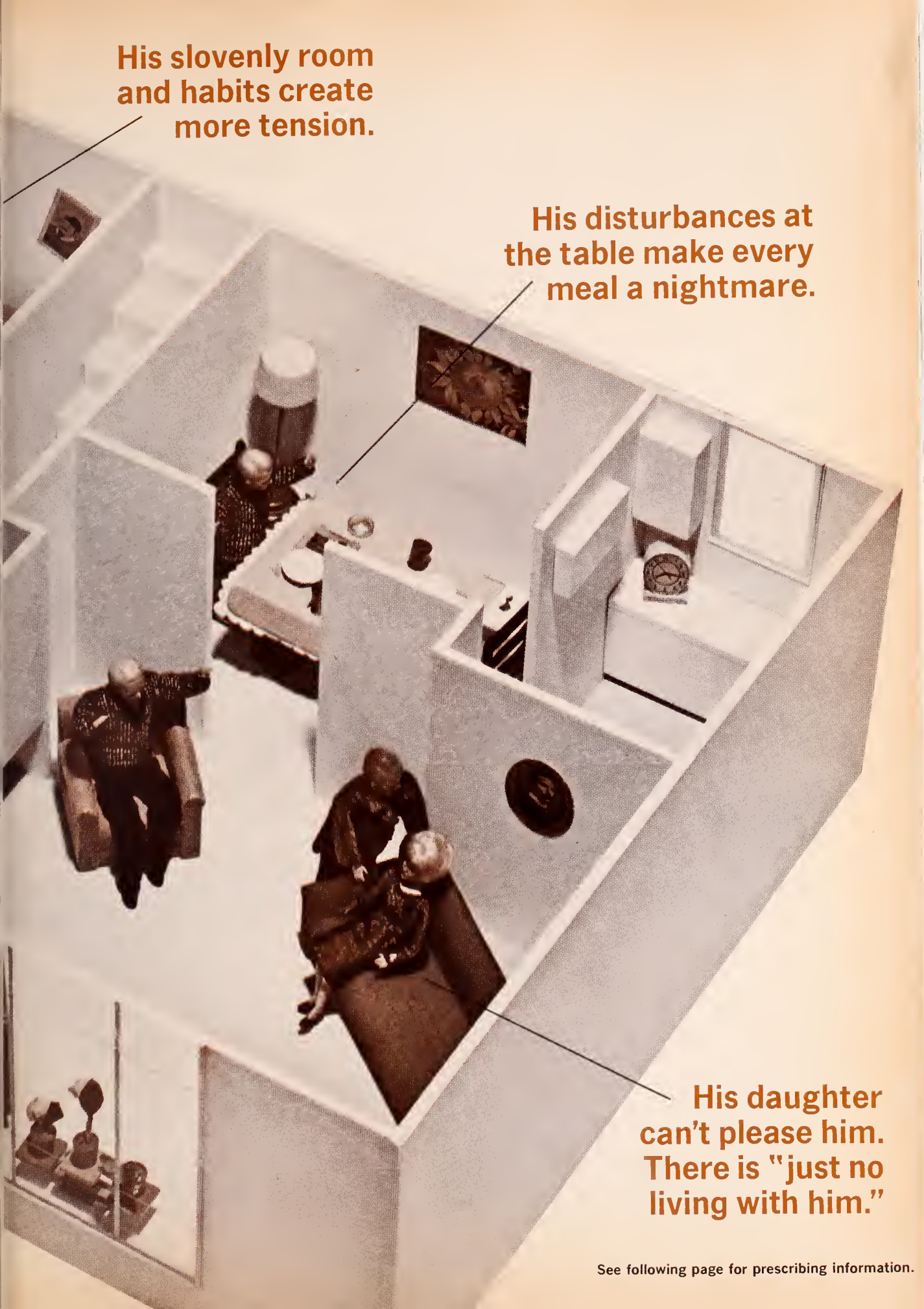
for moderate to severe anxiety

Mellaril®

(thioridazine)

25 mg. t.i.d.

SANDOZ



See following page for prescribing information.

When moderate to severe anxiety strikes home...

Anxiety that seriously interferes with the individual's performance at work, at home, or in the community may be regarded as moderate to severe in degree.

Mellaril often recommends itself to the treatment of moderate to severe anxiety because it

- helps control the most frequent symptoms: marked tension, agitation, apprehension, restlessness, hypermotility
- often alleviates anxiety-induced somatic complaints
- frequently helps strengthen emotional resources
- helps the patient maintain realistic contact with environment, closer harmony with family

Thus, when you consider the anxiety moderate to severe... consider Mellaril.

Contraindications: Severely depressed or comatose states from any cause, and in association with or following MAO inhibitors; severe hypertensive or hypotensive heart disease.

Precautions: Hypersensitivity reactions (e.g., leukopenia, agranulocytosis) and convulsive seizures are infrequent. Pigmentary retinopathy has been observed where doses in excess of those recommended were used for long periods of time. May potentiate central nervous system depressants, atropine, and phosphorus insecticides. Where complete mental alertness is required, administer the drug cautiously and increase dosage gradually. In addition, orthostatic hypotension (especially in female patients) has been observed. Epinephrine should be avoided in treatment of drug-induced hypotension.

Side Effects: Pseudoparkinsonism and other extrapyramidal disorders are infrequent; drowsiness, especially in high doses early in treatment, may occur; nocturnal confusion, dryness of the mouth, nasal stuffiness, headache, peripheral edema, lactation, galactorrhea, and inhibition of ejaculation are noted on occasion; photosensitivity and other allergic skin reactions may occur but are extremely rare.

Before prescribing, see package insert for full product information.

for moderate to severe anxiety

Mellaril®
(thioridazine)
25 mg. t.i.d.

SANDOZ

mudrane®

for

- EMPHYSEMA
- ASTHMA
- CHRONIC BRONCHITIS
- BRONCHIECTASIS

The fast-disintegrating uncoated tablet gives relief in 15 minutes

Each tablet contains:

Potassium Iodide	195 mg.
Aminophylline	130 mg.
Phenobarbital, Caution: May be habit forming...	21 mg.
Ephedrine HCl	16 mg.

FEDERAL LAW PROHIBITS
DISPENSING WITHOUT PRESCRIPTION

Precautions: Usual for aminophylline-ephedrine-phenobarbital. Iodides may cause nausea, long use may cause goiter. Discontinue if symptoms of iodism develop.

Iodide contraindications: tuberculosis, pregnancy.

DOSAGE

One tablet, with full glass of water, 3 or 4 times daily.

Dispensed in bottles of 100 and 1000 tablets.

MUDRANE GG—Formula, dosage and package identical to Mudrane—*except*—100 mg. glyceryl guaiacolate replaces the potassium iodide. The value of Mudrane cannot be enjoyed by a small group in which K.I. is contraindicated. Mudrane GG is prepared for this group.

MUDRANE GG ELIXIR—Four 5 cc teaspoonfuls is equivalent to one Mudrane GG tablet. Dosage adjusted to age and weight of child. Mudrane GG Elixir is for pediatric patients and those who think they cannot swallow tablets. Dispensed in pint and half gallon bottles.

WM. P. POYTHRESS & CO., INC.
RICHMOND, VIRGINIA 23217
Manufacturers of ethical pharmaceuticals since 1856

Vasomist

(ANTIHISTAMINIC) VASOCONSTRICTOR, NASAL DECONGESTANT AND LOCAL ANTIHISTAMINIC

Active Ingredients:
Phenylephrine Hcl 0.25%
Phenylpropanolamine Hcl .. 0.50%
Chlorobutanol 0.15%
Tripelennamine Hcl 0.50%
In Isotonic Solution

Vasomist

(PLAIN)

VASOCONSTRICTOR AND NASAL DECONGESTANT

Active Ingredients:
Phenylephrine Hcl 0.25%
Phenylpropanolamine Hcl ... 0.50%
Chlorobutanol 0.15%
In Isotonic Solution

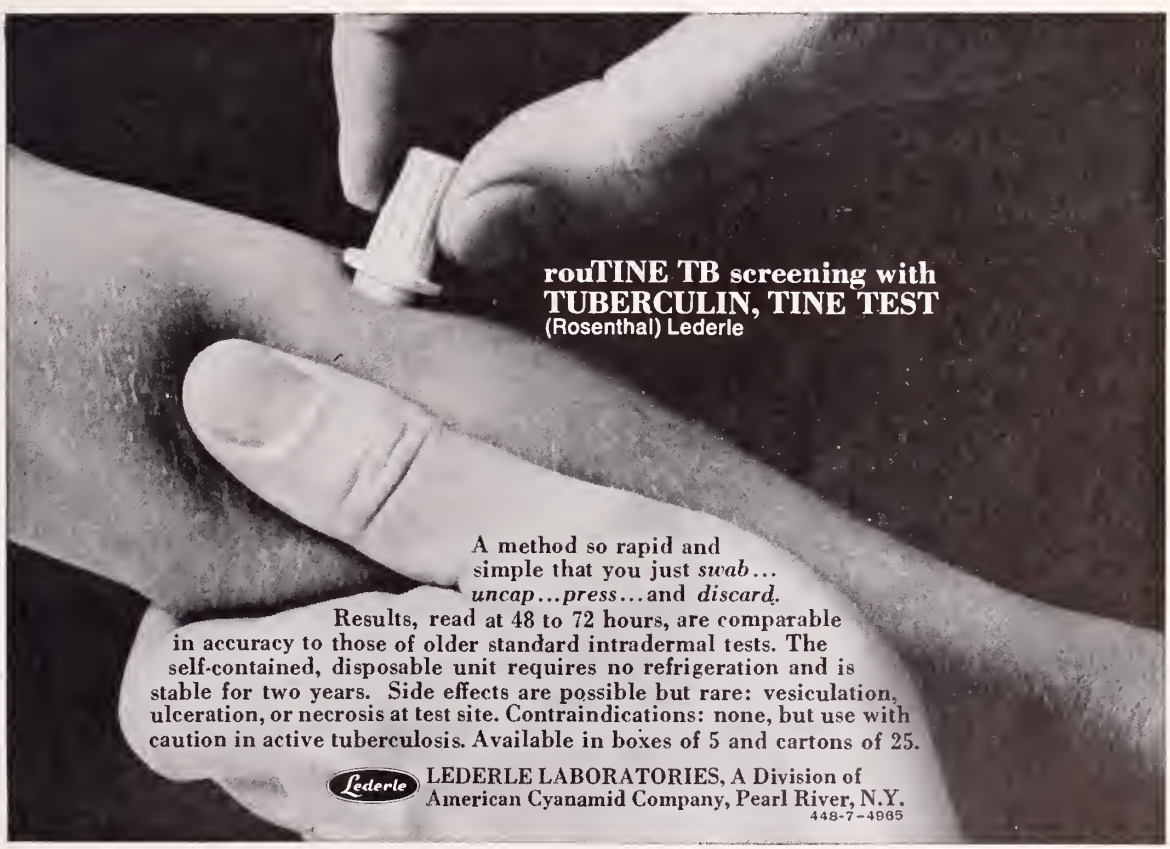
USE: Temporary relief of nasal congestion due to colds and hay fever.
DIRECTIONS: Adults and Children: Instill two or three drops into each nostril, using no more than needed to provide relief. Repeat every three to four hours as needed but not oftener.

AVAILABILITY
In plastic squeeze bottles containing ¾ fluid oz. and in dropper bottles containing 1 fluid oz.

HUMCO LABORATORY
TEXARKANA, ARK.-TEX.



HUMCO LABORATORY
TEXARKANA, ARK.-TEX.
Our Integrity is Your Guarantee



A method so rapid and simple that you just *swab*... *uncap*...*press*...and *discard*. Results, read at 48 to 72 hours, are comparable in accuracy to those of older standard intradermal tests. The self-contained, disposable unit requires no refrigeration and is stable for two years. Side effects are possible but rare: vesiculation, ulceration, or necrosis at test site. Contraindications: none, but use with caution in active tuberculosis. Available in boxes of 5 and cartons of 25.

Lederle LEDERLE LABORATORIES, A Division of American Cyanamid Company, Pearl River, N.Y.
448-7-4965



What can be done for Susan Jane To stop the runs and crampy pain?

Parepectolin for quick relief of acute diarrhea
...soothes colicky pain with paregoric
...consolidates fluid stools with pectin
...adsorbs irritants with kaolin, and protects intestinal mucosa.

In children, Parepectolin may be used to control diarrhea promptly and prevent dehydration, until etiology has been determined. In some cases, Parepectolin may be all the therapy necessary.

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Each fluid ounce of creamy white suspension contains:
Paregoric (equivalent)..... (1.0 dram) 3.7 ml.
Contains opium (¼ grain) 15 mg. per fluid ounce.
warning: may be habit forming
Pectin ..... (2½ grains) 162 mg.
Kaolin (specially purified).... (85 grains) 5.5 Gm.
(alcohol 0.69%)
Usual Children's Dose: One or two teaspoonfuls three times daily.

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Before prescribing, please consult complete product information, a summary of which follows:

Contraindications: Infants, patients with history of convulsive disorders, glaucoma or known hypersensitivity to drug.

Warning: Not of value in the treatment of psychotic patients, and should not be employed in lieu of appropriate treatment.

Precautions: Limit dosage to smallest effective amount in elderly or debilitated patients (not more than 1 mg, one or two times daily initially) to preclude ataxia or oversedation, increasing gradually as needed or tolerated. As is true of all CNS-acting drugs, until correct maintenance dosage is established, advise patients against possibly hazardous procedures requiring complete mental alertness or physical coordination. Driving during therapy not recommended. In general, concurrent use with other psychotropic agents is not recommended. If such combination therapy is used, carefully consider individual pharmacologic effects—particularly with known compounds which may potentiate action of Valium (diazepam), such as phenothiazines, barbiturates, MAO inhibitors and other antidepressants. Advise patients against simultaneous ingestion of alcohol or other CNS depressants. Safe use in pregnancy not established. Employ usual precautions in treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Observe usual precautions in impaired renal or hepatic function. Periodic blood counts and liver function tests advisable in long-term use. Cease therapy gradually.

Side Effects: Side effects (usually dose-related) are fatigue, drowsiness and ataxia. Also reported: mild nausea, dizziness, blurred vision, diplopia, headache, incontinence, slurred speech, tremor and skin rash; paradoxical reactions (excitement, depression, stimulation, sleep disturbances, acute hyperexcited states, hallucinations); changes in EEG patterns during and after drug treatment. Abrupt cessation after prolonged overdosage may produce withdrawal symptoms (convulsions, tremor, abdominal and muscle cramps, vomiting, sweating) similar to those seen with barbiturates, meprobamate and chlordiazepoxide HCl.

Dosage—*Adults:* Mild to moderate psychoneurotic reactions, 2 to 5 mg b.i.d. or t.i.d.; severe psychoneurotic reactions, 5 to 10 mg t.i.d. or q.i.d.; alcoholism, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed; muscle spasm with cerebral palsy or athetosis, 2 to 10 mg t.i.d. or q.i.d. *Geriatric patients:* 1 or 2 mg/day initially, increase gradually as needed and tolerated. (See Precautions)

Supplied: Valium® (diazepam) Tablets, 2 mg, 5 mg and 10 mg; bottles of 50 and 500.

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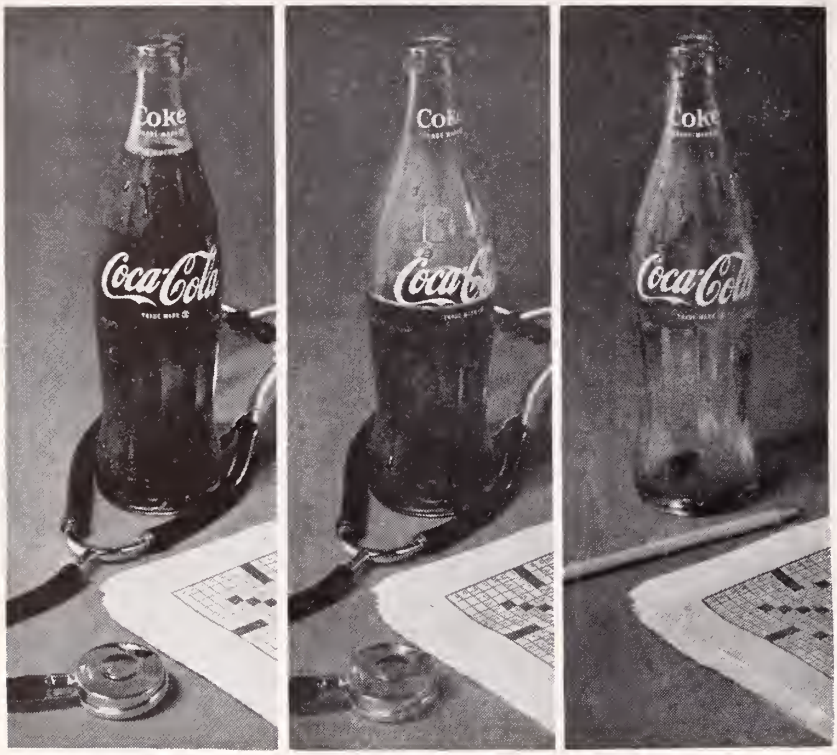
Please see opposite page for important prescribing information.





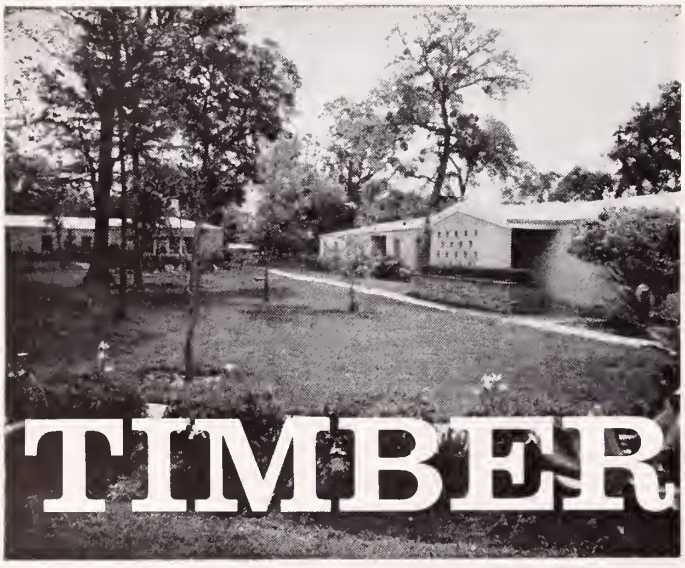






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See next page for a brief precautionary statement.

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Indications

Hypertension

Such as hypertension with or without congestive failure, where Hygroton can be used alone or in conjunction with other agents

(*Precaution:* Antihypertensive therapy with Hygroton should always be initiated cautiously in post-sympathectomy patients and in patients receiving ganglionic blocking agents or other potent antihypertensive drugs, or curare. Reduce dosage of concomitant antihypertensive agents by at least one-half. Barbiturates, narcotics or alcohol may potentiate hypotension.)

Edema

Such as edema associated with:
congestive heart failure
or renal disease

(*Precaution:* Because of the possibility of progression of renal damage, periodic determination of the BUN is indicated. Discontinue if the BUN rises.)

or hepatic cirrhosis

(Hypoproteinemia, if present, must be corrected concomitantly. *Precaution:* Take special care: discontinue if liver dysfunction is aggravated, since hepatic coma may be precipitated.)

or steroid administration
or obesity
or the premenstrual syndrome
or pregnancy, including toxemia

(*Warning:* Use with caution in pregnant patients, since the drug may cross the placental barrier and adverse reactions which may occur in the adult, e.g. thrombocytopenia, hyperbilirubinemia, altered carbohydrate metabolism, etc., are potential problems in the newborn.)

Contraindications

Severe Renal or Hepatic Disease and Demonstrated Hypersensitivity

Other general warnings, precautions and adverse reactions

Warning: With the administration of enteric-coated potassium supplements, which should be used only when adequate dietary supplementation is not practical, the possibility of small bowel lesions (obstruction, hemorrhage, and perforation) should be kept in mind. Surgery for these lesions has frequently been required and deaths have occurred. Discontinue enteric-coated potassium supplements immediately if abdominal pain, distention, nausea, vomiting, or gastrointestinal bleeding occur.

Precautions: Electrolyte imbalance, sodium and/or potassium depletion may occur. If potassium depletion should occur during therapy, Hygroton should be discontinued and potassium supplements given, provided the patient does not have marked oliguria.

Take special care in severe ischemic heart disease and in patients receiving corticosteroids, ACTH, or digitalis. Salt restriction is not recommended.

Adverse reactions: Nausea, gastric irritation, vomiting, anorexia, constipation and cramping, dizziness, weakness, restlessness, hyperglycemia, hyperuricemia, headache, muscle cramps, orthostatic hypotension, aplastic anemia, leukopenia, thrombocytopenia, agranulocytosis, dysuria, impotence, transient myopia, skin rashes, urticaria, purpura, necrotizing angiitis, acute gout, and pancreatitis when epigastric pain or unexplained G.I. symptoms develop after prolonged administration. Other reactions reported with this class of compounds include: jaundice, xanthopsia, paresthesia, and photosensitization.

Average Dosage: 50-100 mg. with breakfast daily.

Availability: White, single-scored tablets of 100 mg. and aqua tablets of 50 mg. in bottles of 100 and 1000.

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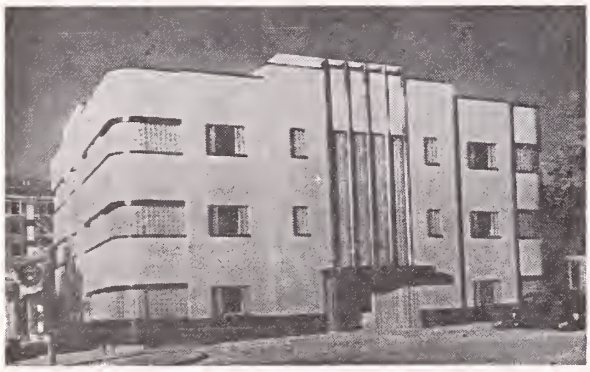
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The JOURNAL
of the Oklahoma State Medical Association

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NEWS

Members of the Oklahoma State Medical Association, the constituent societies of the association, and all readers in general are invited to supply news items of general interest to the profession. Such copy should be received one month prior to the expected date of publication.

ADVERTISING

All advertising copy must be approved by the Editorial Board before acceptance for publication. Copy and/or engravings must reach the *Journal* office by the first of the month preceding the month of publication. General and miscellaneous advertising rates will be sent on request.

EDITING SERVICE

The Editorial Board reserves the prerogative to submit contributions to a Medical Editing Service when warranted. If such is felt necessary, the Editor will contact the author for approval, informing him that there will be a modest charge for this service.

REPRINTS

Authors will receive reprint order forms from the Transcript Press, P.O. Drawer 1058, Norman, Oklahoma 73069, prior to final publication of their articles. Other requests for reprints must be made to the Transcript Press within 30 days after publication.

"Happy words from your past-president"

Nothing is so past as a past president, but I would like one last word with you. All of last year was wonderful. Committees worked beyond the call of duty, and reports showed the results of your efforts. Thanks to all of you again for making my year as your state president such a "Happy One."

If you have kept up with your reading this summer, you will have read the write-up in "MD's WIFE" (July issue, page 19). Also the write-up on page 475 of the August issue of the *Journal of the Oklahoma State Medical Association*. The Oklahoma Council for Health Careers mentioned in each article is now a reality. Our auxiliary will be an Associate Member, and the medical association has asked our State Health Career Chairman to serve as a member of the Board of Directors. This will be one of the three appointees the OSMA as a participating member is entitled to. We are proud of Mrs. Arthur Springall who has been our "little busy bee" for the past two years working on every facet of the project. We are delighted that she is the one to serve on the board. Congratulations Bernice.

Fall Clinical Society is just around the corner. October 1st, 2nd, 3rd, and 4th. Entertainment for the ladies is being planned, and everything sounds just wonderful. Please note the change from the last of October to the first. Plan to attend all events planned by the Woman's Auxiliary to the Oklahoma County Medical Society. Tuesday, October 3rd, is the day for the fabulous luncheon and style show. Fun, thrills and beautiful clothes are only a part of plans for the day. This is our sixtieth birthday and we are really going to have a "party." Watch for the publicity and buy your tickets early.

I do hope to see all of you at Fall Conference. Mrs. George Miller and all of her committees have everything beautifully organized and running smoothly. I have missed all of you since I last saw you at state convention in Tulsa in May. My special thanks go to Mrs. Jack Newport (Patsy) and and Mrs. Raymond Peeples (Bonnie) who were Convention Chairman and Co-Chairman. A perfect convention, beautiful and delightful entertainment, delicious food, and they tell me they "balanced their budget." *How About That?*

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OKLAHOMA CITY

Health Resources Program Planned For Sixteen Counties Comprising "Oklahoma Northeast." In response to the request of an industrial development organization in northeastern Oklahoma, the OSMA and other health groups will sponsor a program on the health resources of the area on October 26th at Western Hills Lodge, Wagoner. With a theme of "Health Services in Northeast Oklahoma . . . Inventory and Initiative for Planning," the half-day program is expected to attract more than two hundred business and civic leaders from sixteen counties. Topics will include: The factors affecting industrial development; obtaining medical, hospital and dental service for a community; an inventory of health facilities; how current statewide planning and development programs will improve the quality and quantity of health service and facilities; and practical suggestions for achieving improved services through local initiative. Hillard E. Denyer, M.D., Bartlesville, is chairman of the program committee.

Twenty to Attend Health Planning Conference: The Oklahoma State Medical Association will send seventeen delegates and three others are expected to represent state health agencies at the "Western Conference on Future Decisions and Directions in Medical Care" to be held November 10th-12th in Chandler, Arizona under the sponsorship of the California Medical Association and the U.S. Public Health Service. The program will deal with medical society involvement in various health planning programs which strongly affect medical practice in the future. Doctors Rex Kenyon, James L. Dennis, and Thomas C. Points will be program participants.

Famous Gaslight Club to Entertain at OSMA's 1968 Annual Meeting: Annual Meeting Chairman Richard B. Price, M.D., Oklahoma City, has announced the booking of professional "Gaslight Party" performers direct from Chicago's famous Gaslight Club. A troupe of "Gaslight Girls" and band will provide four hours of "Roaring '20's" entertainment at the OSMA's "Second Annual Gaslight Party" scheduled for May 17th in Oklahoma City during the association's 62nd Annual Meeting. Other social plans include a "Champagne Party" on Thursday evening, May 16th, and the Inaugural Dinner-Dance on Saturday night.

Tour Europe In '68! More state physicians and spouses are signing up for the OSMA-sponsored European Tour next summer. For only $800 per person from Oklahoma City ($791.50 from Tulsa) you can enjoy a 16-day tour of London, Paris, Lucerne and Rome. Price includes Trans-Atlantic and Inter-Europe jet travel, air-conditioned motorcoach tours, first class hotel accommodations, two meals a day, baggage transfer changes and other service fees, multilingual tour conductor, etc. In addition, OSMA is arranging for professional activities for tax consideration. A seven-day extension is available at $149.00 for those desiring to tour Florence, Venice and Berlin. Write OSMA, P.O. Box 18696, for free colorful brochure.

MEETINGS

Sept. 26th, 1967—OSMA Regional Postgraduate Course, "Coronary Artery Disease," Valley View Hospital, Ada

Oct. 2nd-4th, 1967—Oklahoma City Clinical Society, Sheraton-Oklahoma Hotel, Oklahoma City

Oct. 21st-22nd, 1967—OMPAC "Political Action '68" Conference, Skirvin Hotel, Oklahoma City

Nov. 26th-29th, 1967—AMA Clinical Convention, Houston, Texas

May 16th-18th, 1968—OSMA Annual Meeting, Skirvin Hotel, Oklahoma City

Feb. 5th-6th, 1968—Oklahoma Chapter, American Academy General Practice, The Mayo Hotel, Tulsa □

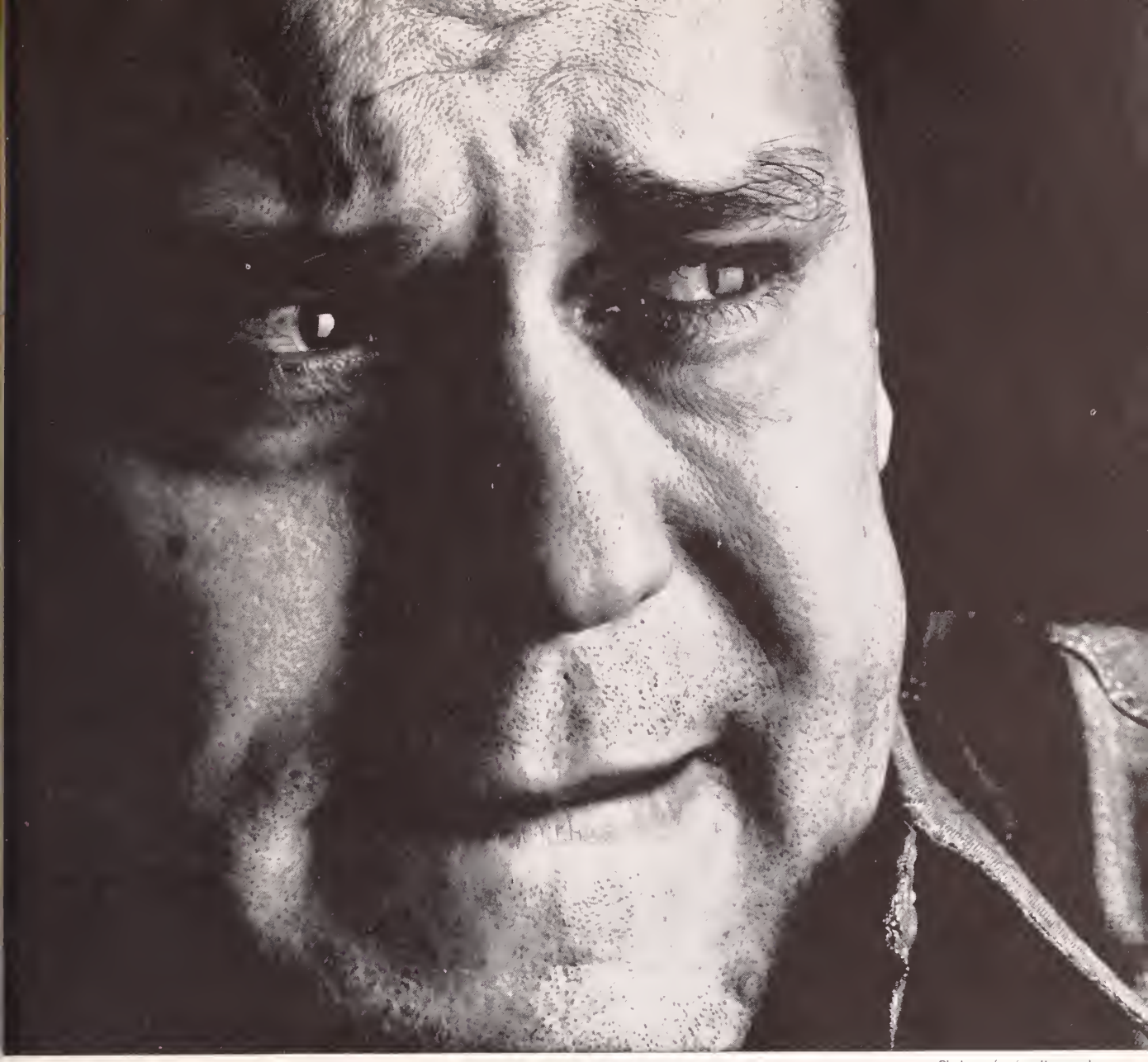


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OKLAHOMA STATE MEDICAL ASSOCIATION
Volume 60 Number 10 October 1967



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- Cardiac Arrhythmias and Acute Intracranial Hypertension
- Social Profiles and Academic Standing: A Study of First Year Medical Students
- Carcinoid Syndrome Presenting as Acute Right Heart Failure
- Effects of Anesthetic Agents on Blood Coagulation

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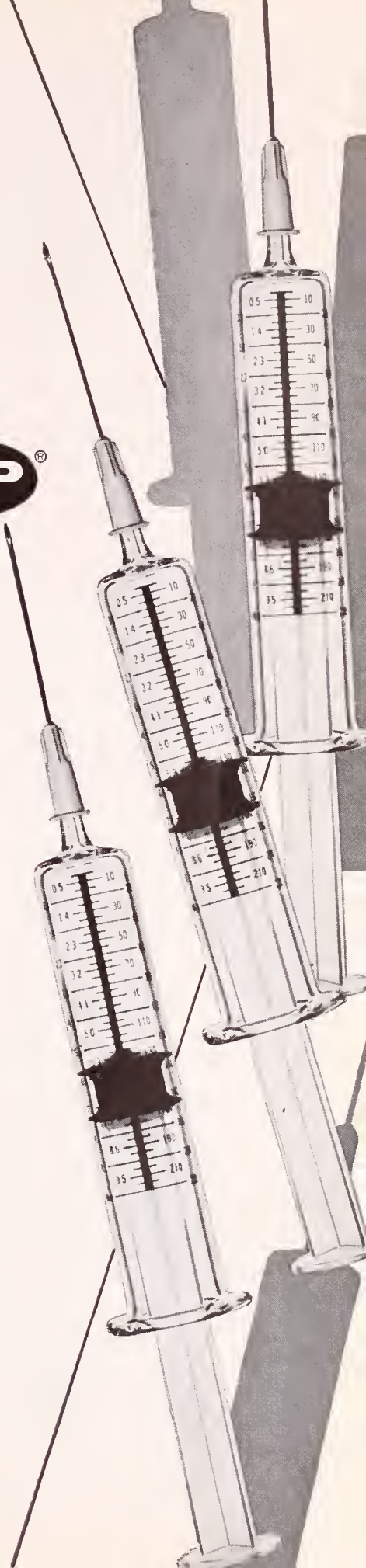


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in any case,
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Therapy:

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Indications: Urinary tract infections caused by gram-negative and some gram-positive organisms.

Side effects: Mainly mild, transient gastrointestinal disturbances; in occasional instances, drowsiness, fatigue, pruritus, rash, urticaria, mild eosinophilia, reversible subjective visual disturbances (overbrightness of lights, change in visual color perception, difficulty in focusing, decrease in visual acuity and double vision), and reversible photosensitivity reactions. Marked overdosage, coupled with certain predisposing factors, has produced brief convulsions in a few patients.

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References: (1) Based on 23 clinical papers, 1512 cases. Bibliography on request. (2) Bush, I. M., Orkin, L. A., and Winter, J. W., in Sylvester, J. C.: Antimicrobial Agents and Chemotherapy—1964, Ann Arbor, American Society for Microbiology, 1965, p. 722.

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eradicates most urinary tract infections...

- Low incidence of untoward effects; no fungal overgrowth, crystalluria, ototoxic or nephrotoxic effects have been observed.
- "Excellent" or "good" response reported *in more than 2 out of 3* patients with either chronic or acute gram-negative infections.[1]

*As many as 9 out of 10 urinary tract infections are now caused by gram-negative organisms: E. coli, Klebsiella, Aerobacter, Proteus, Paracolon or Pseudomonas[2]...However, infections of the urethra and prostate caused by non-gonococcal gram-negative organisms are believed to be less prevalent.

The JOURNAL of the Oklahoma State Medical Association

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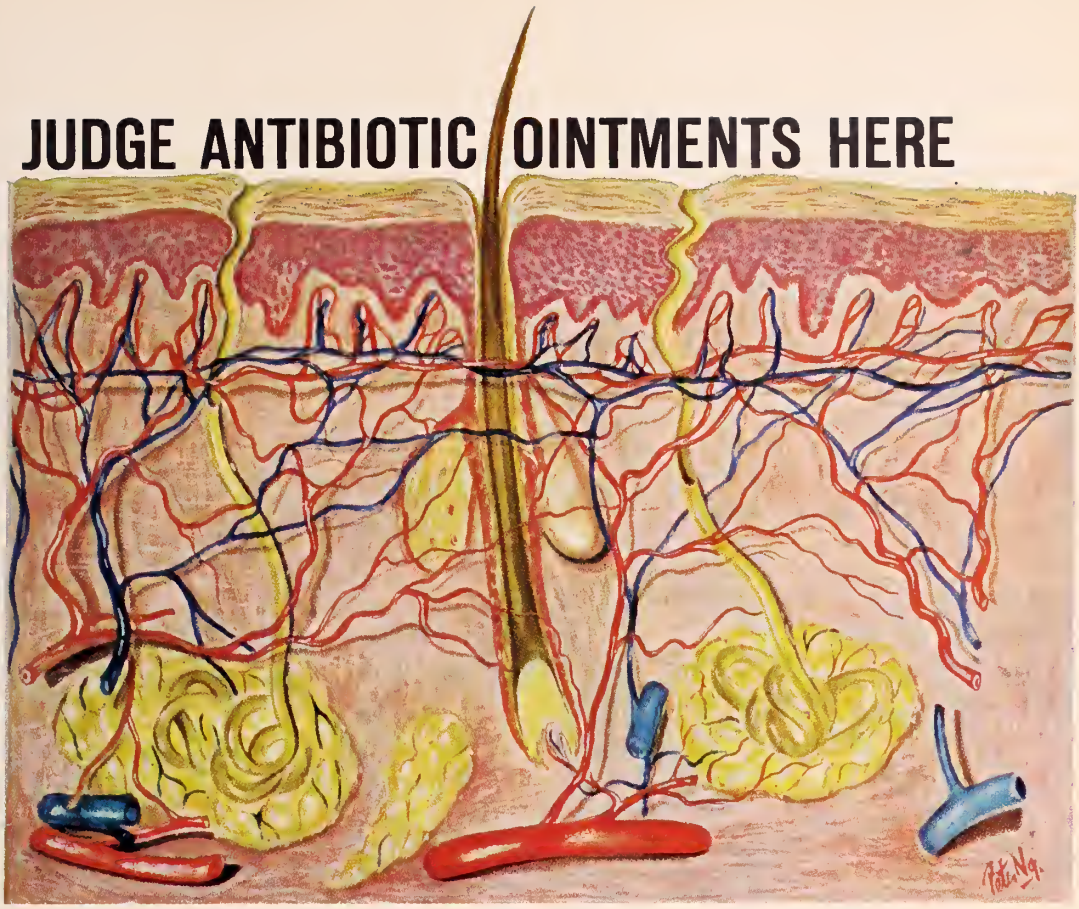


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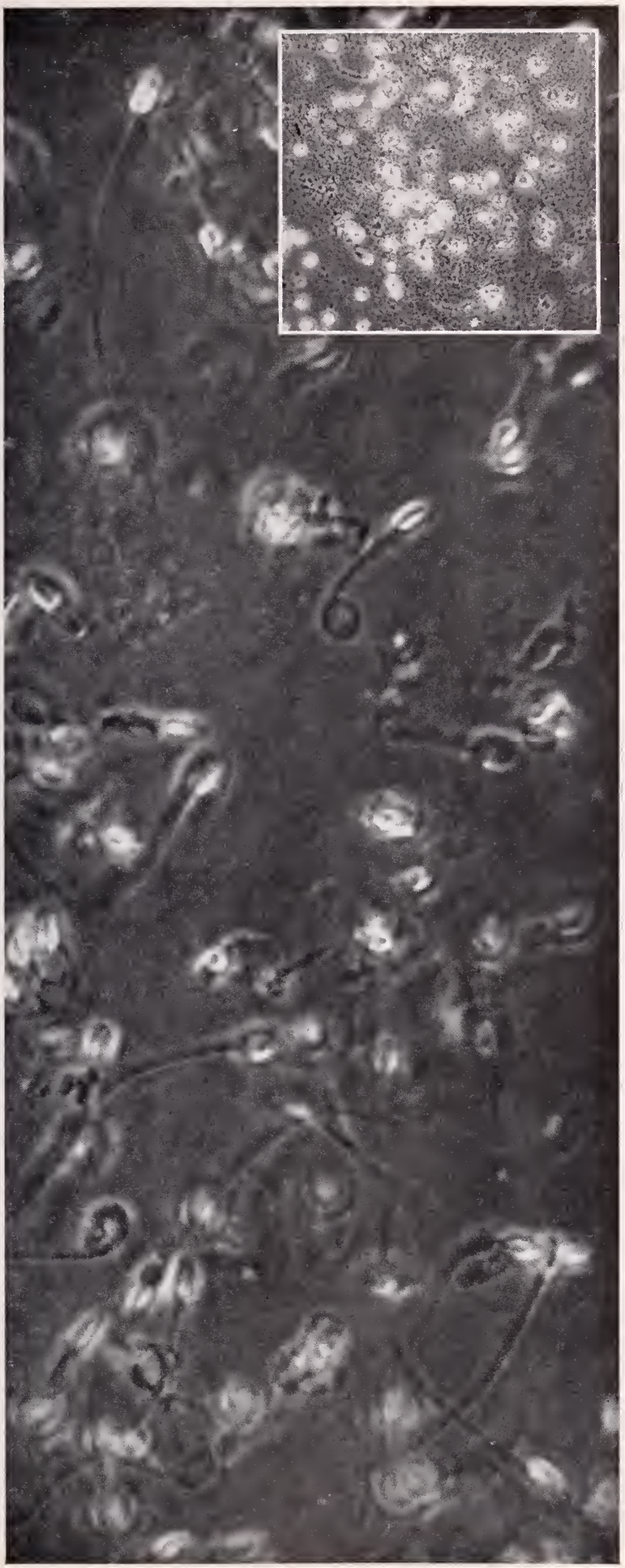
Contraindications: Hypersensitivity to any ingredient.

Precautions: As with all phenacetin-containing products, avoid excessive or prolonged use.

Side Effects: Side effects are uncommon—nausea, constipation, and drowsiness have been reported.

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New view of an oral contraceptive at work

Although suppression of ovulation remains the primary mode of action of oral contraceptives, newer knowledge indicates that products like Norinyl-1— a combination of both low-dosage progestogen and estrogen for the full treatment cycle—may provide multiple action that helps explain their unexcelled record of contraceptive effectiveness. This report explores the possible secondary protective mechanisms offered by combined hormonal administration.

Accumulating evidence has indicated that sparse, highly viscous cervical mucus has a possible adverse effect on the motility and survival of spermatozoa.

The estrogen-opposing progestational ingredient of Norinyl-1 (norethindrone 1 mg. with mestranol 0.05 mg.) changes the usual midcycle picture of a thin, watery cervical mucus. The result—a built-in barrier that appears to inhibit sperm from reaching the ovum should one be released. The inset in the adjoining photograph shows immobile spermatozoa as they appear in cervical mucus taken from a patient treated with Norinyl-1.

See last page for contraindications, precautions, side effects and dosage.

How the estrogen-opposing action of Norinyl-1 creates cervical mucus that may be hostile to sperm penetration

Normally, estrogen activity during the fertile midcycle stimulates the production of a profuse and watery cervical mucus that permits maximum sperm motility and promotes penetration.

But what happens when Norinyl-1 is administered? Its potent progestogen, norethindrone, opposes estrogen stimulation of cervical mucus. Consequently, the amount of mucus decreases and its viscosity increases. This results in a sparse but thick mucus barrier that appears to diminish the vitality of the sperm and to impair its powers of penetration.

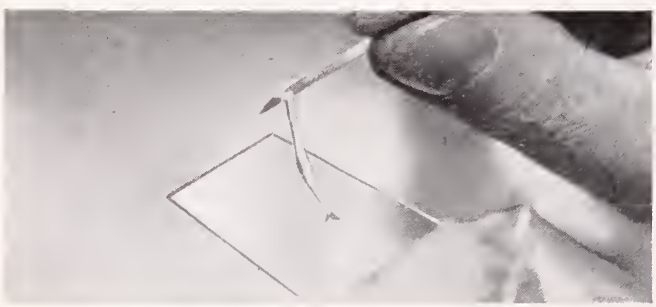
The role of viscous cervical mucus as a secondary action of Norinyl-1

In a report on 89 patients taking this medication,* cervical mucus obtained from cycle day 5 to cycle day 29 appeared scant and thick and exhibited little or no Spinnbarkeit.

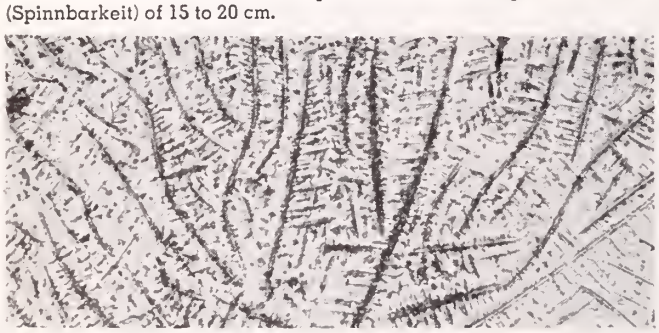
In the opinion of this investigator, the effect on cervical mucus may be sufficient to prevent conception.

*Cohen, M. R.: Symposium: Mechanisms of Action of Low Dosage Oral Contraceptive, Yale University Medical Center, New Haven, Conn., April 6, 1967.

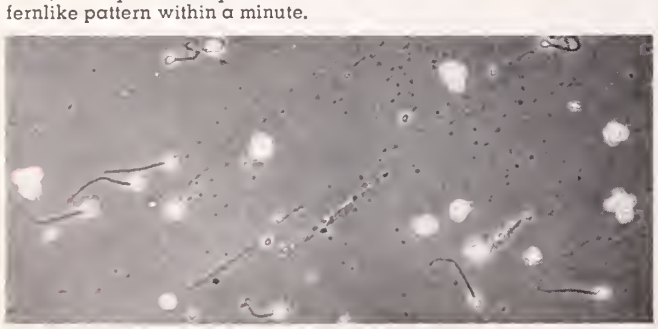
Normal cervical mucus at midcycle in untreated patient is known to permit sperm motility... promote sperm penetration.



Cervical mucus is thin and watery with a stretchability (Spinnbarkeit) of 15 to 20 cm.



Thin, watery mucus crystallizes into this well-defined, fernlike pattern within a minute.

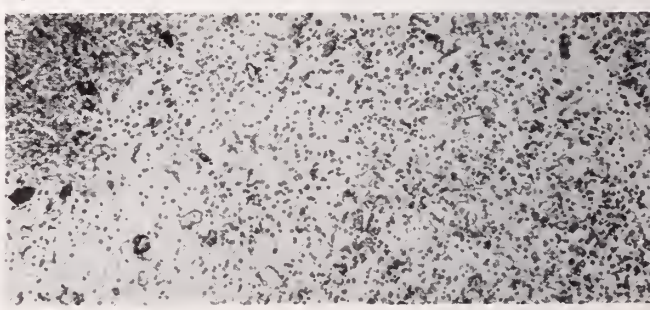


Spermatozoa appear healthy, are active and freemoving.

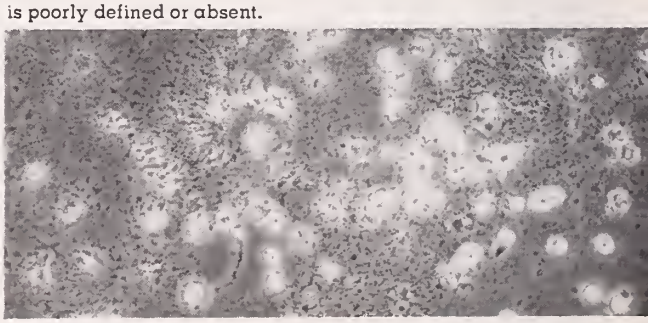
Viscous cervical mucus at midcycle produced by Norinyl-1 appears to impair sperm vitality... inhibit penetration.



Cervical mucus is scanty, thick and viscous. Spinnbarkeit is 1 cm. or less.



In thick, viscous cervical mucus the fern pattern is poorly defined or absent.

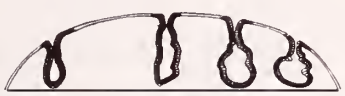


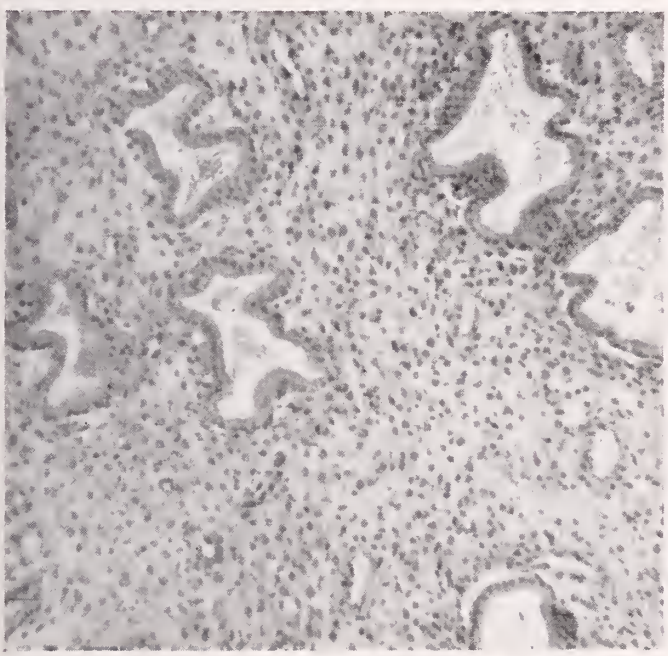
Immobile spermatozoa as they appear in cervical mucus taken from a patient treated with Norinyl-1.

How Norinyl-1 alters normal endometrial responses—another possible protective mechanism

Let us suppose that an ovum is released—as occurs in an occasional, rare case—and somehow a sperm succeeds in penetrating the cervical mucus barrier. Should this come about, one additional action of Norinyl-1 may protect the patient from unwanted pregnancy. The theory is that progestogen intake makes endometrial tissue unreceptive to implantation.

Endometrium of untreated patient

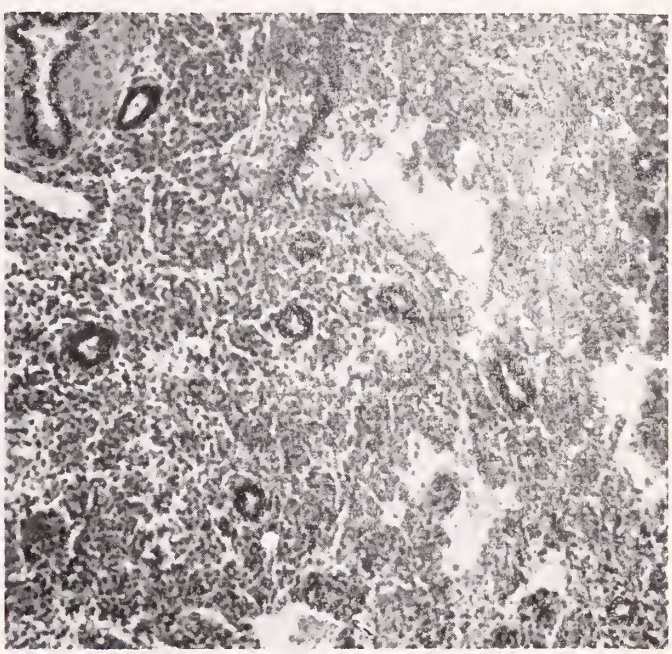




Normally, the endometrium progresses through a proliferative phase stimulated by estrogen and a secretory phase stimulated by progesterone. During the secretory phase the endometrium is receptive to the fertilized ovum.

Endometrium produced by Norinyl-1





When Norinyl-1 is administered its progestogen component—norethindrone—accelerates the secretory phase and suppresses glandular and vascular development.

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Reduction of oral contraceptive dosage to lowest effective levels has become a well-accepted principle of conservative medical practice. In keeping with this view, Norinyl is now available in a new strength in which *both* norethindrone and mestranol are reduced 50 percent. Studies show that Norinyl-1 achieves fertility control with only 1.05 mg. of combined progestogen and estrogen per tablet.

Norethindrone was first reported for use as a progestational agent in human beings in 1955. Norethindrone 2 mg. with mestranol 0.1 mg., as an oral contraceptive, is currently in use by over 2,000,000 women. Clinical experience now establishes that Norinyl-1 also amply meets the criteria of reliability and safety.*

*Symposium on Low-Dosage Oral Contraception, Palo Alto, Calif., July 15, 1965.

PRESCRIBING INFORMATION

Contraindications: 1. Patients with thrombophlebitis or with a history of thrombophlebitis or pulmonary embolism. 2. Liver dysfunction or disease. 3. Patients with known or suspected carcinoma of the breast or genital organs. 4. Undiagnosed vaginal bleeding.

Warnings: 1. Discontinue medication pending examination if there is sudden partial or complete loss of vision or if there is a sudden onset of proptosis, diplopia, or migraine. If examination reveals papilledema or retinal vascular lesions, medication should be withdrawn. 2. Since the safety of Norinyl-1 in pregnancy has not been demonstrated, it is recommended that for any patient who has missed two consecutive periods, pregnancy should be ruled out before continuing the contraceptive regimen. If the patient has not adhered to the prescribed schedule, the possibility of pregnancy should be considered at the time of the first missed period. 3. Detectable amounts of the active ingredients in oral contraceptives have been identified in the milk of mothers receiving these drugs. The significance of this dose to the infant has not been determined.

Precautions: 1. The pretreatment physical examination should include special reference to breast and pelvic organs, as well as a Papanicolaou smear. 2. Endocrine and possibly liver function tests may be affected by treatment with Norinyl-1. Therefore, if such tests are abnormal in a patient taking Norinyl-1, it is recommended that they be repeated after the drug has been withdrawn for 2 months. 3. Under the influence of estrogen-progestogen preparations, preexisting uterine fibroids may increase in size. 4. Because these agents may cause some degree of fluid retention, conditions that may be influenced by this factor, such as epilepsy, migraine, asthma, cardiac, or renal dysfunction, require careful observation. 5. Although a cause and effect relationship has not been established, Norinyl-1 should be used with caution in patients with a history of cerebrovascular accident. 6. In relation to breakthrough bleeding, as in all cases of irregular bleeding *per vaginam*, nonfunctional causes should be borne in mind. In cases of undiagnosed vaginal bleeding, adequate diagnostic measures are indicated. 7. Patients with a history of psychic depression should be carefully observed and the drug discontinued if the depression recurs to a serious degree. 8. Any possible influence of prolonged Norinyl-1 therapy on pituitary, ovarian, adrenal, hepatic or uterine function awaits further study. 9. A decrease in glucose tolerance has been observed in a small percentage of patients on oral contraceptives. The mechanism of this decrease is obscure. For this reason, diabetic patients should be carefully observed while receiving Norinyl-1 therapy. 10. Because of the occasional occurrence of thrombophlebitis and pulmonary embolism in patients taking oral contraceptives, the physician should be alert to the earliest manifestations of the disease. A cause and effect relationship has not been demonstrated. 11. Because of the effects of estrogens on epiphyseal closure, Norinyl-1 should be used judiciously in young patients in whom bone growth is not complete. 12. The age of the patient constitutes no absolute limiting factor, although treatment with Norinyl-1 may mask the onset of the climacteric. 13. The pathologist should be advised of Norinyl-1 therapy when relevant specimens are submitted.

Side Effects: The following adverse reactions have been observed with varying incidence in patients receiving oral contraceptives: nausea, vomiting, gastrointestinal symptoms, breakthrough bleeding, spotting, change in menstrual flow, amenorrhea, edema, chloasma, breast changes (tenderness, enlargement and secretion), loss of scalp hair, change in weight (increase or decrease), changes in cervical erosion and cervical secretions, suppression of lactation when given immediately postpartum, cholestatic jaundice, erythema multiforme, erythema nodosum, hemorrhagic eruption, migraine, rash (allergic), itching, rise in blood pressure in susceptible individuals, mental depression.

The following occurrences have been observed in users of oral contraceptives. A cause and effect relationship has not been established: thrombophlebitis, pulmonary embolism, neurooocular lesions.

The following laboratory results may be altered by the use of oral contraceptives: increased bromsulphalein retention and other hepatic function tests, coagulation tests (increase in prothrombin, factors VII, VIII, IX and X), thyroid function (increase in PBI and butanol extractable protein-bound iodine and decrease in T^3 values), metapyrone test, pregnanediol determination.

Other side effects reported to have occurred in association with use of this drug are dizziness, hirsutism, pains in legs, back, chest and abdomen, dysuria, drowsiness, vaginal discharge, libido increased and decreased, eruptions, hypermenorrhea, hypomenorrhea, increased appetite, G.U. infections, varicose veins, abdominal fullness, acne, headache, nervousness, allergies, blurred vision, pain in eyes, and itching in eyes. For complete clinical data, see package insert.

Dosage and Administration: 1. One tablet of Norinyl-1 is administered orally for 20 days beginning on day 5 of the menstrual cycle. (Count day 1 of the cycle as the first day of menstrual bleeding.) Repeat this dosage schedule for each cycle. 2. If no menstrual period occurs after a cycle of treatment (20 tablets) in which patient adhered to the schedule, the patient must be instructed to resume taking the Norinyl-1 tablets 7 days after the previous 20-day course was completed. For example, if the last pill of a previous cycle had been taken on a Sunday, then a new cycle of treatment should begin on the following Sunday. 3. In the postpartum woman, it is recommended that the first cycle of treatment should begin on day 5 of the first menstrual cycle. However, Norinyl-1 should not be administered during lactation.

Availability: Norinyl-1 (norethindrone 1 mg. with mestranol 0.05 mg.)—Dispensers of 20 and 60 and bottles of 250 tablets.

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References: 1. Shuman, C.: Am. J. Med. Sci., 225:54, 1953. 2. Perchuk, E., et al.: Angiology, 12:102, 1961. 3. Rawls, W., et al.: Med. Times, 87:818, 1959.

6/67 Q-706A

When the agitated geriatric disrupts the home...

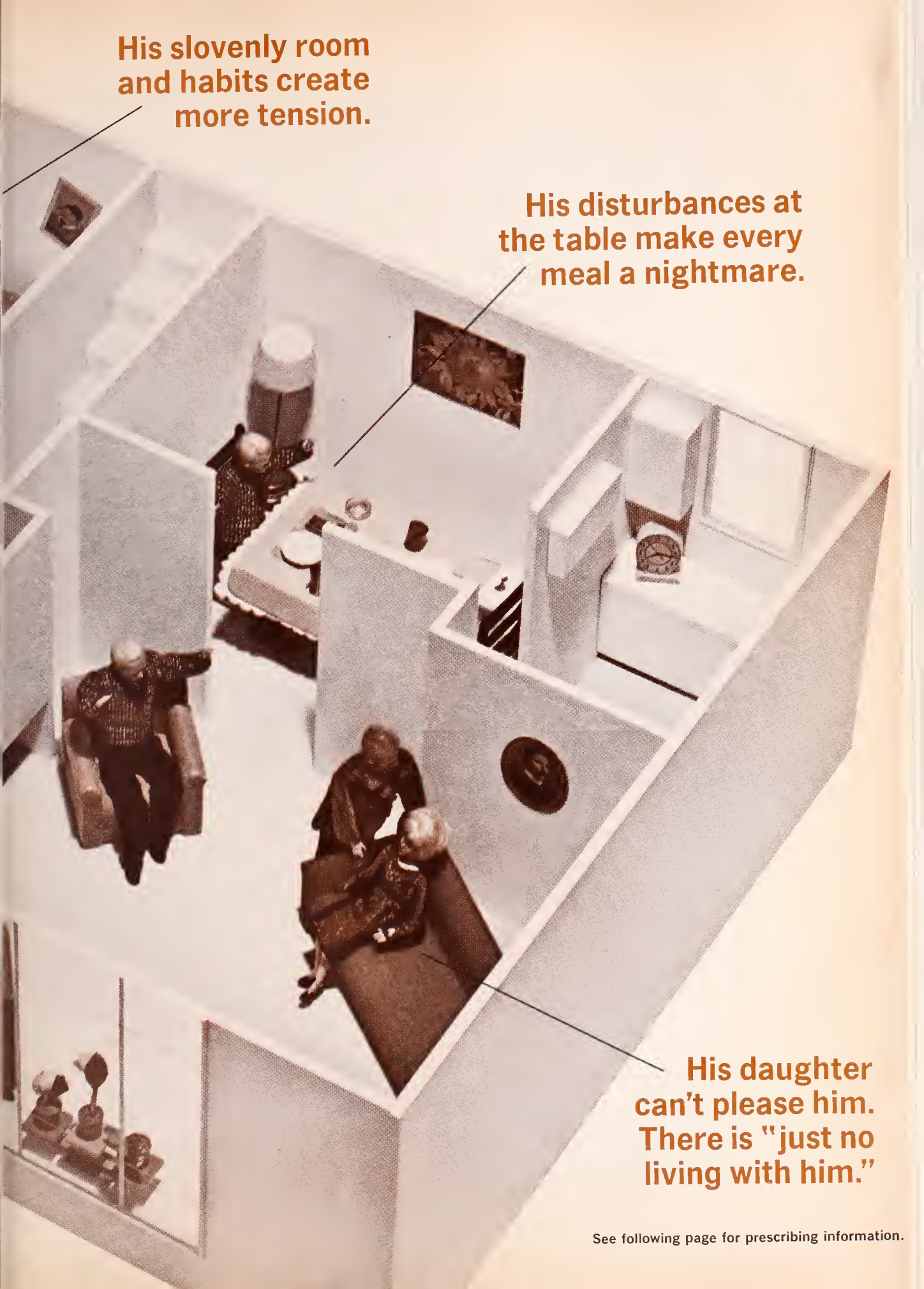
His teen-age granddaughter won't invite friends home because of his outbursts.



for moderate to severe anxiety

Mellaril®
(thioridazine)
25 mg. t.i.d.

SANDOZ



See following page for prescribing information.

When the agitated geriatric disrupts the home...

Anxiety that seriously interferes with the individual's performance at work, at home, or in the community may be regarded as *moderate to severe* in degree.

Mellaril often recommends itself to the treatment of moderate to severe anxiety because it

- helps control the most frequent symptoms: marked tension, agitation, apprehension, restlessness, hypermotility
- often alleviates anxiety-induced somatic complaints
- frequently helps strengthen emotional resources
- helps the patient maintain realistic contact with environment, closer harmony with family

Thus, when you consider the anxiety moderate to severe... consider Mellaril.

Contraindications: Severely depressed or comatose states from any cause, and in association with or following MAO inhibitors; severe hypertensive or hypotensive heart disease.

Precautions: Hypersensitivity reactions (e.g., leukopenia, agranulocytosis) and convulsive seizures are infrequent. Pigmentary retinopathy has been observed where doses in excess of those recommended were used for long periods of time. May potentiate central nervous system depressants, atropine, and phosphorus insecticides. Where complete mental alertness is required, administer the drug cautiously and increase dosage gradually. In addition, orthostatic hypotension (especially in female patients) has been observed. Epinephrine should be avoided in treatment of drug-induced hypotension.

Side Effects: Pseudoparkinsonism and other extrapyramidal disorders are infrequent; drowsiness, especially in high doses early in treatment, may occur; nocturnal confusion, dryness of the mouth, nasal stuffiness, headache, peripheral edema, lactation, galactorrhea, and inhibition of ejaculation are noted on occasion; photosensitivity and other allergic skin reactions may occur but are extremely rare.

Before prescribing, see package insert for full product information.

for moderate to severe anxiety

Mellaril®
(thioridazine)
25 mg. t.i.d.

SANDOZ

mudrane®

for

- EMPHYSEMA
- ASTHMA
- CHRONIC BRONCHITIS
- BRONCHIECTASIS

The fast-disintegrating uncoated tablet gives relief in 15 minutes

Each tablet contains:

Potassium Iodide	195 mg.
Aminophylline	130 mg.
Phenobarbital, Caution: May be habit forming...	21 mg.
Ephedrine HCl	16 mg.

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Precautions: Usual for aminophylline-ephedrine-phenobarbital. Iodides may cause nausea, long use may cause goiter. Discontinue if symptoms of iodism develop.

Iodide contraindications: tuberculosis, pregnancy.

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One tablet, with full glass of water, 3 or 4 times daily.

Dispensed in bottles of 100 and 1000 tablets.

MUDRANE GG—Formula, dosage and package identical to Mudrane—*except*—100 mg. glyceryl guaiacolate replaces the potassium iodide. The value of Mudrane cannot be enjoyed by a small group in which K.I. is contraindicated. Mudrane GG is prepared for this group.

MUDRANE GG ELIXIR—Four 5 cc teaspoonfuls is equivalent to one Mudrane GG tablet. Dosage adjusted to age and weight of child. Mudrane GG Elixir is for pediatric patients and those who think they cannot swallow tablets. Dispensed in pint and half gallon bottles.

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"All Registered Nurses are Alike"

It stands to reason. They all go through the same training; they all have to pass the same tests; they all have to measure up to the same standards. Therefore, all registered nurses are alike.

That's nonsense, of course. But it's no more nonsensical than what some people say about aspirin. Namely: since all aspirin is at least supposed to come up to certain required standards, then all aspirin tablets must be alike.

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So next time you hear someone say that all aspirin tablets are alike, you can say, with confidence, that it just isn't so.

You might also say that all registered nurses aren't alike, either.



easy does it!

tear, moisten, compare–that's all!



The Low Birth Weight Problem

A nationwide focus on the low birth weight term infant has evolved over the past two years. Formerly, an infant weighing less than five pounds 8 ounces was classed as premature, regardless of gestational age, but numerous studies have shown that many infants of low birth weight are products of 40 weeks' gestation.

Many problems have come to light in the small term infant. The occurrence of congenital malformations is increased. Many of the infants grow slowly and appear to have growth retardation. The incidence of hypoglycemia is very high. This low blood sugar must be recognized promptly and appropriate measures instituted to correct it. The central nervous system of the neonate is extremely vulnerable to low blood glucose concentrations, and any episode of hypoglycemia is potentially very toxic to the developing central nervous system. All infants who are born with low birth weights from term pregnancies should be observed carefully for signs and symptoms of hypoglycemia. A blood glucose determination at age four hours in a low birth weight term infant is a reasonable approach to the detection of impending hypoglycemia. — *Armond H. Start, M.D.* □

Where There's A Will

WHEN Franklin T. Oates, M.D., began general practice 20 years ago in Lepanto, Arkansas he was the fifth physician in that quiet farming community a few miles east of Memphis, Tennessee. The economy was booming and the seasonal influx of transient labor often tripled the town's resident population. In that favorable environment Doctor Oates' kindly, competent work was rewarded by a thriving practice so he built a home, started a family and sank his roots deep into the community.

As the years passed a gradual change from hand labor to mechanical farming came about. At one time there had been a house with a family on every 40 acres of land in the area but eventually the ratio dwindled until there was only one house to every 500 acres. To make matters worse, especially from the standpoint of general practice, The Pill was introduced and with it obstetrical and pediatric calls began to decline. One by one the town's doctors died or moved elsewhere and no new doctors came to Lepanto. Other townspeople drifted away too, usually to larger cities, until Doctor Oates began to wonder how much longer he could support his family with the medical work needed by people remaining in the little community.

The problem was not simple. He could go almost anywhere else of course, with assurance of adequate work immediately yet if he were to desert his old friends at such a time their struggle to hold the community together might be lost. He was obligated to the folks who had supported him so many years as well as to his now half grown family who would have to make many adjustments by moving to another town.

At last he found a solution by mastering a unique medical cosmetic procedure. He became expert in grafting hair on to men's bald pates and in so doing a part of his practice suddenly expanded to an area extending far beyond Lepanto itself; some men have driven hundreds of miles to avail themselves of his services. These beautifying treatments do not relieve a life endangering condition but they bring comfort to certain hairless ones and, more important, Lepanto can keep its doctor for more noble purposes.

Doctor Oates' dilemma has been shared by many other physicians practicing in small communities during the past 20 years. When a man sees a city, "his" city, fading away before his eyes he is inclined to panic, or at least to adopt the obvious solution of moving regardless of who may suffer as a result of his decision. Here, however, is a praiseworthy example which shows that pulling up stakes is not the only answer to questions raised by advancing urbanization and the distribution of medical care. Not many doctors are likely to take up hair grafting as a sideline, of course, but if the time should come when greener pastures are beckoning, a man ought to consider some alternative of diversifying or augmenting his practice.—*C. B. Dawson, M.D.* □



A Tulsa store advertises "The friendly store where you are greeted at the door." Corny, isn't it? And yet this is an attempt at good public relations. Who is the greeter at your door, doctor, and who establishes your public relations image when your patients walk in? Of course, probably it is your office girl, assistant, nurse or whomever you place at the desk out front.

Are you doing all you can to ensure that "desk person" handles John Public properly? Do all your helpers belong to your county, state and national chapters of the American Medical Assistants Association? This organization exists solely to help your people improve themselves in their job of helping you. These groups are professional organizations, not labor unions, and we should back them to the fullest.

If your assistants—all of them—do not yet belong to AAMA, urge them to contact their local secretary and join. Their complete local, state and national dues are $20.00 a year and if you will pay this yourself (a legitimate office expense) it will be much easier for them to join.

Further, see to it that these loyal helpers of yours have ample time off to attend the AAMA meetings. The increased "know how" which they bring back to you will more than repay you.

A doctor's helper in Pennsylvania submitted this to the *Cambria County Medical Bulletin*—

A woman knocked at the Heavenly Gate;
Her face was scarred and old.
As she stood before the man of fate
For admission to the Fold,
"What have you done?" St. Peter asked,
"To gain admission here?"
"I've been a doctor's assistant, Sir,
For many and many a year."
The pearly gates swung open wide;
St. Peter touched the bell.
"Come in and choose your harp, my dear,
You've had your share of hell."

Let's recognize and back these people of ours, who are so essential to us, and reduce that "share of hell." One of the best ways is to help their own organization, the American Association of Medical Assistants.

Maxwell A. Johnson MD

OSMA JOURNAL/scientific

Cardiac Arrhythmias and Acute Intracranial Hypertension

TOM PARKER, M.D.
GUNTER R. HAASE, M.D.

The electrocardiogram may at times provide a clue alerting the physician to the presence of progressively increasing intracranial pressure.

THE OCCURRENCE of electrocardiographic changes in patients with cerebrovascular disease is now well accepted. The most striking changes have been seen in patients with intracerebral and subarachnoid hemorrhage, and have consisted of displacement of the ST segment, inversion or increase of amplitude of the T wave, a prominent U wave and alterations of the QTc.[3, 4, 5, 1, 2, 9, 10, 11]

The cases to be described demonstrated, in addition to the above, displacement of the atrial pacemaker and aberrations in ventricular depolarization. These changes were felt to reflect a vagotonic state, resulting from acute intracranial hypertension.

CASE REPORTS

I. A 43-year-old white man developed severe occipital headache on October 6, 1964. This was associated with momentary loss of vision and hearing. On October 7, he had a generalized seizure and was admitted to the hospital. Blood pressure was 140/90, pulse 60, respirations 20, temperature 98° F. The patient was somnolent but easily aroused. The pupils were reactive and equal. There was a ptosis of the right upper lid and slight left facial weakness. Muscular strength was reduced in the left arm and leg, but the reflexes were active and equal. On the following day the patient had another generalized seizure. The electrocardiogram shortly after this convulsion revealed bradycardia with a varying level of nodal escape. There was a prominent U deflection in V4 and V5. A strip taken from lead V6 is shown in figure 1.

Lumbar puncture revealed bloody spinal fluid under increased pressure. A right carotid arteriogram revealed an aneurysm 5 cm distal to the bifurcation of the right internal carotid artery. At surgery, a subdural clot was encountered overlying an area of hemorrhage into the right frontal lobe. The aneurysm was clipped and the patient had a prolonged convalescence. Follow-up electrocardiograms revealed no abnormalities.

II. A 17-year-old Negro girl was admitted to the hospital on October 19, 1964, with a history of headaches of three weeks duration. For two days before admission there had been increased somnolence, dizziness, and syncope. On examination, there was questionable papilledema with slight ataxia and "non-anatomical hypalgesia" of the left side of the body. A lumbar puncture revealed

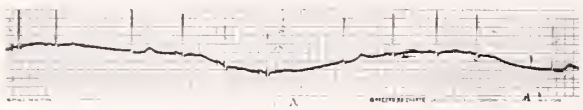


Figure 1. Lead V6. In beats 3 and 7, P just precedes and fuses with QRS, while in beat 11, P, his disappeared or may be occurring retrograde. Each of these beats represents nodal escape.

a pressure of 25 cm of water. The fluid was clear and contained no cells; the protein was 40 mg per cent. An electroencephalogram was abnormal with bursts of 3-4/sec. high voltage slow waves in the parieto-occipital leads bilaterally.

The patient seemed to improve in the hospital and was discharged to be followed in the clinic. The headache persisted, and during the two days before her last admission to the hospital, increased drowsiness and irritability were observed by her family. She was returned to the hospital November 13, 1964. At this time the pulse was slow and irregular, the rate varying from 50 to 70 beats per minute. The blood pressure was 130/72. She was drowsy but oriented. She fell asleep frequently, awakening only to complain of severe headache. Papilledema was present bilaterally. There was a paralysis of the right third cranial nerve. There was drift of the left arm and a Babinski sign on the left, while the deep tendon reflexes were symmetrical. An electrocardiogram revealed bradycardia with a varying level of nodal escape. There was a prominent U wave in V2. A strip of lead 3 is shown in figure 2.

A right carotid arteriogram demonstrated a deep right frontal mass, and at surgery a tumor containing a considerable amount of semi-liquid clot was found and aspirated. Histologically this proved to be an angiosar-



Figure 2. Lead 3. Beats 3, 4 and 5 represent varying levels of nodal escape, with retrograde P waves, well seen in beats 3 and 4.

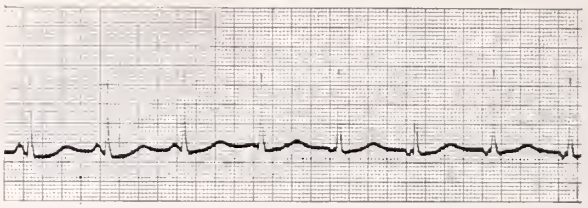


Figure 3. Lead 2. Starting with beat 3, there is progressive decrease in the amplitude of P, which has become inverted in beat 5. The rate is constant with an RR interval of .80 second.

coma. She did not regain consciousness and died within 24 hours after surgery.

III. A 75-year-old Negro woman developed progressively worsening headache on October 4, 1964. Weakness of her left side, lethargy, and vomiting were noted a few hours later. On admission to the hospital she was responsive but poorly oriented. Head and eyes were deviated to the right. There was a left homonymous hemianopsia. Pupils were equal and reactive. There was left central facial weakness with a Babinski sign, and a cortical sensory loss on the left. Within 30 minutes after admission she became deeply comatose. The blood pressure at that time was 210/100 with an irregular rhythm. Cheyne-Stokes breathing developed. The right pupil became fixed and dilated. There was no papilledema. Bilteral Babinski signs were present. An electrocardiogram shortly after admission revealed ST segment depression in the limb and precordial leads, with prolongation of the QT interval and a prominent U wave in the precordial leads. There was a wandering

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Tom Parker, M.D., graduated from the University of Oklahoma School of Medicine where he is now a member of the teaching faculty. He is certified by the American Board of Internal Medicine. His medical affiliations include the American Academy of Neurology and the American Society of Internal Medicine.

Gunter R. Haase, M.D., graduated from the University of Munich, Germany, in 1949. He is certified by the American Board of Psychology and Neurology. Presently, he is Professor and Chairman of the Department of Neurology at Temple University Medical School. Doctor Haase is a member of the American Academy of Neurology.

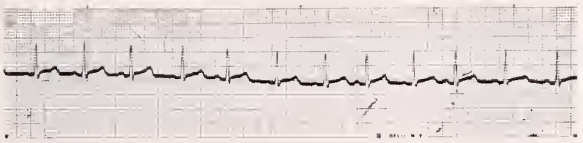


Figure 4a.

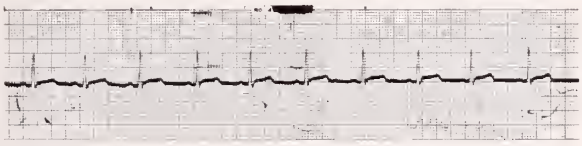


Figure 4b.

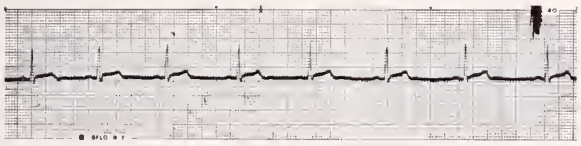


Figure 4c. Lead 2. During a period of 20 seconds there is a spontaneous decrease in the heart rate from 88 to 53/minute. Changes in the size of P occur in random fashion in this strip and bear no constant relation to the rate.

atrial pacemaker with frequent PVC's. A strip of lead 2 is shown in figure 3.

Lumbar puncture revealed bloody spinal fluid with pressure in excess of 30 cm. of water.

The patient deteriorated during the next 36 hours and died on the third hospital day.

At autopsy a large hemorrhage into the right posterior cerebral hemisphere with almost complete destruction of the occipital lobe was found. Hippocampal herniation was present bilaterally. Examination of the heart revealed moderate left ventricular thickening and dilatation of the right ventricle and tricuspid valve. The coronary arteries were widely patent with minimal atherosclerotic changes of the left anterior descending coronary artery. Microscopic examination revealed no evidence of myocardial disease.

IV. A 22-year-old white man suddenly developed severe frontal and occipital headache, blurred vision, and vomiting on April 9, 1965. Examination four hours after onset of his illness showed an alert white male who complained of severe headache. The blood pressure was 150/90. The pulse rate was recorded as 70, although it fluctuated

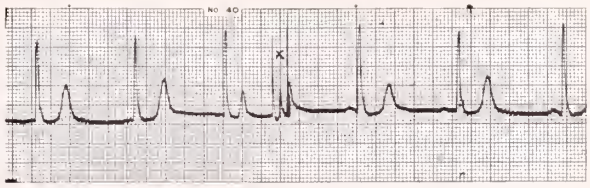


Figure 5. Lead 2. P is flat or inverted in beats 1, 2, and 3; it is upright in beats 4, 5, and 6 and there is variation in the PR interval. Except for the distorted beat (x) caused by slowing of the paper speed, the rate is approximately constant.

widely from one moment to the next. Frequent delayed beats were also noted. There was slight resistance to forward flexion of the neck. Papilledema was not present.

Neurological examination revealed only diffusely brisk reflexes which were slightly greater on the left than on the right. An electrocardiogram revealed elevation and bowing of the ST segment in the right precordial leads. There was a wide fluctuation in the rate, associated with a wandering atrial pacemaker. A strip of lead two is shown in figure 4.

An echoencephalogram showed a 5 mm shift of midline structures to the left. At lumbar puncture the spinal fluid was bloody with pressure in excess of 30 cm of water. Arteriography was performed on the second hospital day and revealed a large saccular aneurysm of the right middle cerebral artery, 3 cm distal to the bifurcation of the internal carotid.

The patient underwent a craniotomy on the fifth hospital day. An extremely thin walled aneurysm was found arising from the middle cerebral artery with virtually no neck. An attempt was made to clip the aneurysm, but bleeding was encountered immediately, requiring ligation of the middle cerebral artery.

Postoperatively the patient rapidly regained consciousness but had a left hemiparesis which has since improved.

V. A 42-year-old Negro male with a past history of pancreatitis and hypertension, suddenly lost consciousness on April 4, 1965, and was admitted to the hospital on the same day. Left hemiparesis and conjugate deviation of the eyes to the right were noted.

The admission diagnosis was cerebral thrombosis. There was progressive deterioration after admission. He developed papilledema and dilatation of the right pupil. An electrocardiogram revealed a wandering atrial pacemaker, with intermittent aberrant ventricular depolarization. A strip of lead 3 is shown in figure 5.

At surgery, a large right frontal intracerebral hematoma was found and removed. Immediately following removal of this clot, the patient's pulse became regular at a rate of about 130 per minute. He did poorly postoperatively, became decerebrate, and died on the second post-operative day.

DISCUSSION

Arrhythmias, of the type which occurred in these patients, are probably quite common in patients with acute central nervous system insults. We have noticed similar changes in other case reports which dealt primarily with ST and T wave changes, secondary to cerebral vascular accidents. Sinus arrhythmia was a frequent finding in Shuster's patients.[1] Cropp and Manning,[2] in an extensive study of 29 cases of intracerebral hemorrhage, noted nodal rhythm and wandering atrial pacemaker in two of their subjects. A "sinus mechanism" was said to be present in only 22 subjects.[2]

The arrhythmias seen in our patients reflected displacement of the cardiac pacemaker away from the sinus node. This was seen electrocardiographically as a change in the configuration of the P wave. With shortening of the PR interval and/or aberrations in the ventricular complex (QRS and T), the impulse was assumed to arise in or near the AV node. These ectopic beats were usually associated with slowing of the heart rate, and never occurred as premature events. They were therefore felt to represent escape beats or rhythms, rather than premature extrasystoles. They sometimes occurred singly, terminating a long sinus pause as in figures 1 and 2. In such cases, gross irregularities in the pulse rate could be appreciated clinically. In other instances there were graded shifts of the pacemaker between SA and AV nodes, with barely perceptible rate changes as seen in figures 3 and 5.

These arrhythmias grouped together seem well encompassed by the term "pacemaker suppression." We feel that they are physiological events which reflect the vagotonia of increased intracranial pressure. There was no evidence of myocardial disease in any of the cases reported.

The vagal origin of pacemaker suppression finds strong support in the classic experiments of Meek and Eyster. In 1915, their investigations demonstrated that cardiac slowing during vagal stimulation was associated with suppression of the upper SA node and resultant escape of lower areas, above, in or below the AV node. More recently, arrhythmias bearing marked similarity to those seen in our patients have been produced in cats by midbrain and hypothalamic stimulation. These are abolished by ligation or freezing of the vagus nerve.[7, 8]

Pacemaker suppression was observed only in patients with acutely rising intracranial pressure, independent of the cause. In addition to the cases presented, we have seen it in three more patients with subdural hematoma over the convexity, posterior fossa subdural hematoma, and epidural hematoma, respectively. We feel that escape rhythms or beats should arouse the suspicion of rising intracranial pressure in any patient with headache, abnormal behavior, or depressed level of consciousness.

SUMMARY

Cardiac arrhythmias are reported in five patients with acute cerebral insults. They were characterized by suppression of the sinus node with "escape" of pacemaker areas in or near the AV node. This presumably results from increased vagal tone 2° to acute intracranial hypertension. Clinical and experiment evidence to support this conclusion is presented. □

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1211 North Shartel, Oklahoma City, Oklahoma

OSMA FORMS SPEAKERS BUREAU

Thirty Oklahoma physicians have pledged their support to the newly formed OSMA Speakers Bureau. The project is designed to furnish programs about medicine and medicine's views to selected business, professional and civic organizations throughout the state.

Maxwell A. Johnson, M.D., President of the OSMA said, "The Speakers Bureau gives us a vehicle to carry medicine's views and opinions to community leaders. This direct verbal communication will assure us that our ideas are reaching influential audiences without distortion."

During the coming months the OSMA executive office will actively solicit speaking engagements for the bureau members. A colorful brochure will be mailed to a selected list of Kiwanis, Rotary, Lions and other civic, business and professional groups. Speakers will present topics on six subjects: Smoking and Health, Alcoholism, Heart Disease, Cancer, Medicine and Religion, and Quackery.

Each member of the bureau has been furnished a set of "canned" or prepared talks on each of the subjects. In addition to the talks they received reference material on each subject and were encouraged to prepare talks more suited to their individual style of delivery.

"In this era of instant communication," Doctor Johnson said, "the importance of a particular message is often lost in the general hubbub. Public speaking is a profitable experience for the individual, but, above all, it sets his message apart and insures that it will not be lost."

The bureau was kicked off with a special "speech clinic" in Oklahoma City, September 30th and October 1st. Three AMA staff members and Mr. Bob Lang, Ph.D., of the Cleveland Academy of Medicine, conducted the two-day meeting and instructed the participants in speech construction, audience analysis, proper delivery and radio and television speaking.

Any physician interested in joining the Speakers Bureau should contact the OSMA executive office and offer his services. He will be furnished a set of the prepared talks and reference material and his name will be placed on the membership list for future speaking engagements. □

Social Profiles and Academic Standing: A Study of First Year Medical Students

JOHN G. BRUHN, Ph.D.
C. ALEX ADSETT, M.D.
HENRY B. BIRD, M.A.

This paper reports the results of an exploratory study which found that certain social characteristics of first year medical students were more indicative of their academic performance than either MCAT scores or premedical grades.

A SIGNIFICANT AMOUNT of literature in medical education has been concerned with determining predictors of academic success in medical school. Most of these studies have focused on the value of premedical grades and Medical College Admission Test scores. Neither of these factors has emerged as a strong, consistent predictor of academic success. Nevertheless, these criteria appear to be quite effective in selecting medical students, since only about nine per cent of medical students fail to graduate, which is low compared to other types of graduate education.[1]

It would seem that, while objective criteria are of some value in the gross screening of medical school applicants, the more precise determinants of academic success are far more complex and frequently are related to the characteristics of both students and schools. Subtle social and psychological characteristics of students may not be readily apparent until they experience the reality of medical school. Despite the common features of medical school culture, there are unique characteristics of schools and faculties. The interaction of these may significantly affect students' motivation and academic performance. For this reason it is extremely difficult, even among seemingly clear-cut cases, to determine whether poor academic performance is related to inadequate background, lack of ability, or to personal factors. Some research has indicated that many unsuccessful students are not necessarily intellectually less capable of undertaking medical studies; rather, emotional factors appear to interfere with their academic performance.[2, 3]

Because of the complexity of human behavior, the variations in student selection among schools, and the variations in the characteristics of applicants by region, it is unlikely that a single factor, or set of factors, will be found to predict success accurately in all medical schools. Rather it would seem that the identification of predictive factors would be most useful to admission committees in their respective medical schools.

Social and psychological factors, with the exception of age, have not been considered

From the Department of Preventive Medicine and Public Health of the University of Oklahoma Medical Center, Oklahoma City, Oklahoma.

in studies concerned with academic achievement among medical students. The present study attempted to explore the relevance of some of these factors. Specifically, the purpose of the present study was to determine if clusters of social and psychological factors existed which would distinguish the academically successful and unsuccessful medical student. Since medical student attrition is greatest in the first year of medical school, this study was limited to a study of first year students. Also, since it was desirable first to determine what social and psychological factors might be important as predictors, the study was retrospective in design and exploratory in nature. By approaching the identification of social and psychological predictors from the standpoint of clusters of factors, it was also possible to consider the characteristics which were, and were not, uniformly shared by students in a given class, as well as to note those factors which appeared to be related to the differing academic performance of the students.

METHODS

An extensive questionnaire was given to 103 first year medical students entering the University of Oklahoma Medical School in the fall of 1965. The questionnaire was given during the week preceding the beginning of classes. The form elicited information regarding the student's age, marital status, religion, his parents' marital status, education and occupation, as well as similar data about his siblings. Numerous questions dealt with the student's intended specialty choice, his attitudes about a career in medicine, the influence and support of others regarding his decision to enter medicine, doubts about his decision, anticipated adjustment problems, expectations of his academic performance, how he planned to budget his time, and comparisons of his undergraduate education with his expectations of medical school. The students were also given a questionnaire designed to determine whether they were more tolerant or intolerant of ambiguity.[4] It was felt that the academic performance and adjustments of students who were more tolerant of ambiguity (that is, able to tolerate unstructured cues) would differ from the academic performance and adjustments of students who were more intolerant of ambiguity. These forms were given in addition to the California Personality Inventory,[5] which would provide some data on the personality characteristics of the students. At the conclusion of the academic year the class standing of each student was obtained, as well as the number and nature of his visits to the Student Health Service during the year.

The goal of the study was to examine social and psychological factors existing before admission to medical school and their relationship to academic achievement at the end of the first year. The number and nature of visits to the Health Service were considered one index of adjustment during the first year of medical school and intrinsically related to both the social and psychological characteristics of students and their academic performance.

The class was grouped into thirds according to academic standing, *i.e.*, upper, middle and lower. Students who dropped out of school were analyzed separately. Comparisons were made between these four groups of students on each of the social variables, the California Personality Inventory, and

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the number and nature of visits to the Health Service. Eighteen of the social variables included in the questionnaire appeared to differentiate the upper and lower thirds of the class. These factors were: 1) student's age, 2) marital status at admission, 3) parents' social class, 4) father's achieved education, 5) religious background of student's family, 6) number of brothers, 7) number of sisters, 8) student's age rank with respect to siblings, 9) average frequency with which the student consulted a physician each year, 10) how the student felt he would react to a psychiatric diagnosis of a problem of his, 11) the student's method of coping with emotional problems, 12) his medical plans, 13) whether he had considered other careers, 14) student's estimation of his academic performance, 15) whether student had encouragement and support about his decision from others, 16) his degree of tolerance or intolerance of ambiguity, 17) whether he had any friends in the medical school to which he was admitted, and 18) how he planned to budget his time during the first year of medical school. The students in the upper third of the class were, by definition, the more successful, hence the social characteristics of these students were felt to be positive factors associated with their academic success. Conversely, students in the lower third of the class were, by definition, the more unsuccessful, hence the social characteristics of these students were felt to be negative factors associated with the lack of academic success.

Using the 18 social characteristics, each student was assigned a score of +1 for each match with a characteristic considered to be positively associated with academic success. A score of —1 was assigned for each match with a characteristic considered to be negatively associated with academic success. Ideally, the most successful student would receive a score of +18, and the most unsuccessful student would receive a score of —18. The scores of each student on each of the 18 characteristics were totaled, and in this manner it could be determined to what degree he "fit" the ideal profile of either the successful or unsuccessful student. Needless to say, it was not expected that the 18 characteristics were definitive in constructing a profile of student success or failure; neither was it expected that any student would possess all the characteristics associated with either success or failure. In this respect the present study should be viewed as exploratory and subject to replication and possible expansion. In addition, it was recognized that not all factors related to academic success are known, or identifiable, at the time of admission to medical school. Certain characteristics, for example, the strength of students' motivation, may only come to light after they are engaged in the reality of the medical school situation. It was felt that the number and nature of visits to the Student Health Service would be one index of adjustment difficulties in school, and might be predictably related to the social background of the student. Since these are *post hoc* factors, they of course could not be included among the 18 items comprising the social profile, but are considered separately.

RESULTS

General Characteristics of the Class

The class was composed of 99 men and four women. The mean age of all of the students was 22.5 years; the age range was from 20 to 36 years. Sixty-six of the students were single, 33 were married, and four were divorced at admission. The majority of the students were Protestant, from middle class backgrounds, and considered themselves politically conservative. The students as a group were less tolerant of ambiguity compared to students engaged in other types of graduate study. The scores on the California Personality Inventory indicated that this class was remarkably similar to other groups of medical students tested elsewhere. As a class the students were intellectually and socially mature, out-going, assertive and possessed a high degree of self-assurance, social presence and well-being. In terms of these general characteristics this class was considered representative of first year students at this medical school.

Social Profiles and Academic Standing

When the 18 social characteristics were considered together a general profile emerged. The most meaningful contrast in profiles was between the students in the

upper and lower thirds of the class as follows:

The more successful students appeared to be 20 or 21 years old, married at the time of admission, from a middle or upper middle class background and with fathers who had completed college or graduate education. More often these students' families had a non-fundamentalistic (more liberal) religious orientation. These students were more likely to have one or no brothers, two or more sisters and be the middle or oldest child in their family. They consulted a physician once a year or as they perceived the need. If a physician diagnosed a physical complaint of theirs as due to emotional problems, they would tend to show some disbelief, if not reject the diagnosis. When they had emotional problems they tried to work them out by themselves. Most of the students planned to specialize, preferring internal medicine and surgery. They felt that a career in medicine was one of several careers that they could find satisfying. They estimated that in the first year they would do considerably better than their classmates academically. Both of their parents, and spouse if married, had expressed strong encouragement about their decision to enter medicine. They had a higher tolerance of ambiguity than did their classmates in the middle and lower third of the class. They either had no friends or several friends in the upper classes in medical school. They appeared to be realistic about budgeting their time while in school, estimating that they would have ten or fewer hours per week for extracurricular activities.

The more unsuccessful students were often 22 years of age or older, single at the time of admission, from lower middle or working class backgrounds, with fathers who had a maximum of high school education. Their families frequently had a fundamentalistic (more conservative) religious orientation. They were more likely to have two or more brothers and one or no sisters, and to be the youngest child in their family. They tended to consult a physician two or more times a year. If a physician diagnosed a physical complaint of theirs as due to emotional problems, they felt they would want to find the cause, but were more inclined to seek help from others for emotional problems.

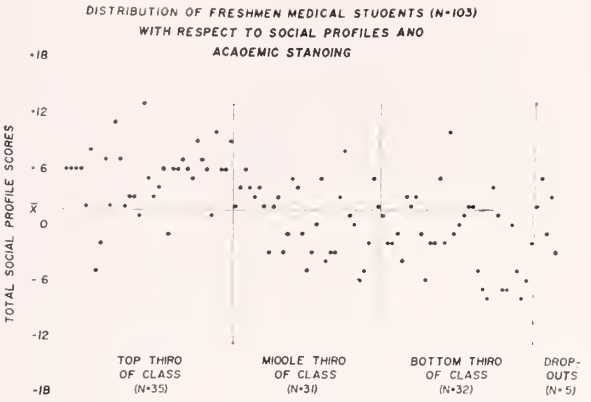


Figure 1.

They were often more uncertain about their medical plans, but those who were interested in specializing favored Pediatrics, Psychiatry and Obstetrics-Gynecology. They felt that medicine was the only career that could satisfy them. In estimating their academic performance they expected to do average or below average work compared to their classmates. Their parents either had expressed no opinion or slight disapproval about their decision to enter medicine. They were more intolerant of ambiguity. They tended to have one or two friends in the upper classes of medical school. They anticipated having about 14 hours per week for extracurricular activities.

The middle third of the class tended to have characteristics of both the successful and the unsuccessful student. Although in terms of the social characteristics they were more heterogeneous compared to the upper and lower third of the class, they were homogeneous with respect to possessing a judicious proportion of factors related to a steady, unremarkable performance.

Figure 1 shows the distribution of the entire first year class with respect to their social profile scores and academic standing. It is apparent from this figure that the relationship between positive scores and academic success is strongest among the upper third of the class. The middle third appears to be more inconsistent, with about half the students having predominantly positive, and the other half having predominantly negative, social characteristics. Students with predominantly negative characteristics tend to cluster in the lower third of the class. The drop-outs, although too few in number to warrant firm inferences, did

not show a definite trend with respect to their social profile scores.

Since standardized pre-medical grades and MCAT scores were available, it was desirable to see the extent to which they were predictive of academic success, in lieu of, or in addition to, predictability by means of the social profile scores. The division of the class into thirds was retained so that the distribution of the pre-medical grades, MCAT scores, and social profile scores would be comparable. Table I shows the results of these comparisons. It is noted that the social profile scores were significantly associated with academic standing ($p < .001$). The standardized pre-medical grades were also associated with academic standing ($p < .05$). MCAT scores showed no significant association with academic standing. When pre-medical grades and the social profile scores were considered jointly, the predictability of academic standing was not enhanced over that achieved when the social profile scores were considered as a sole predictor of success. Whether the social characteristics are valid and reliable predictors of academic success awaits their prospective application to subsequent first year medical students.

California Personality Inventory Scores

The scale scores on the CPI were analyzed by class standing using a two-way analysis of variance, completely randomized design. As shown in table II, the only significant differences between the three academic groups was on Sense of Well Being. The scores of the drop-outs, however, are worthy of note. Although there are too few drop-outs to warrant any strong inferences, the drop-outs tended to score lower than the other groups on Dominance, Self-Control, Tolerance, Good Impression and Achievement via Conformance. This seems to indicate that prior to beginning classes the drop-outs were different from their fellow students in these respects. Other studies in this medical school have shown that drop-outs tend to have poor relationships with authority, much emotional conflict, little self-esteem and feel alienated from their fellow students.[6]

Health Service Visits

The entire class averaged 3.4 visits to the Health Service over the academic year, although 17 students did not use the Health Service at all. These visits were largely for minor upper respiratory, gastrointestinal and dermatological complaints. One-fourth of the class consistently used the Health Service throughout the year, however, during the months of October and November

TABLE I

Ranges of Social Profile Scores, Standardized Pre-Medical Grade Averages, and Average MCAT Scores According to Class Standing

		Academic Standing				
	Ranges of Scores	Upper Third	Middle Third	Lower Third	Drop-Outs	Totals
		N=	N=	N=	N=	
*Social Profile Scores	$\geq +4$	24	9	3	1	37
	-1 to +3	9	12	13	3	37
	$\leq$ -2	2	10	16	1	29
**Standardized Pre-Medical Grades	$\geq$ 2.32	16	11	8	4	39
	2.02 - 2.31	10	13	7	1	31
	$\leq$ 2.01	9	7	17	-	33
***Average MCAT Scores	$\geq$ 510	15	10	9	2	36
	460 - 509	11	12	10	1	34
	$\leq$ 459	9	9	13	2	33
	Total	35	31	32	5	

*All Chi-square calculations excluded the drop-outs. Social Profile Scores $x^2 = 29.650$; 4df; $p < .001$.

**Standardized Pre-Medical Grades, $x^2 = 9.539$; 4df; $p < .05$. After standardization 3.0 = A; 2.0 = B and 1.5 = C+.

***Since the Quantitative Ability, Verbal Ability, Modern Society and Science Scores were not significantly related to academic standing separately, an average of all four scores was used in this analysis. MCAT Scores $x^2 = 2.736$; 4df; $p > .70$.

TABLE II

California Personality Inventory Scale
Mean Scores by Class Standing

CPI Scales	Upper Third (N=35)	Middle Third (N=31)	Lower Third (N=32)	Drop-Outs (N=5)
Dominance	32	30	31	28
Capacity for Status	22	22	23	21
Sociability	27	27	27	26
Social Presence	38	36	39	37
Self-Acceptance	24	23	24	24
Sense of Well-Being*	39	39	39	35
Responsibility	33	33	33	32
Socialization	39	38	39	37
Self-Control	31	33	31	26
Tolerance	26	27	26	23
Good Impression	19	20	20	16
Communality	26	27	26	26
Achievement via Conformance	30	30	31	27
Achievement via Independence	23	23	23	22
Intellectual Efficiency	44	43	43	42
Psychological-Mindedness	13	14	14	13
Flexibility	11	11	11	12
Femininity	16	17	17	18

*The drop-outs differed significantly from the other three groups on Sense of Well-Being. $F=2.899$; df 3, 99; $p < .05$.

and in February and March, the Health Service was visited by one-third of the class.

Students in the upper third of the class averaged 2.9 visits, students in the middle third averaged 3.2 visits, students in the lower third averaged 4.5 visits, and drop-outs averaged 1.2 visits. The drop-outs scored significantly higher on the Cornell Medical Index, which indicated that they experienced more physical and psychological symptomatology at the time of their visits to the Health Service compared to other students who used the Health Service. Generally, students in the upper and middle third of the class reported to the Health Service with physical complaints, whereas students in the lower third had more psychosomatic and psychological complaints. Thirteen students in the class received psychiatric help; nine of the students were in the lower third and four of the students were in the upper third of the class. Although it is realized that some students may have sought private medical or psychiatric help, it was felt that the use of the Health Service would give a general indication of adjustment problems.

The 'Deviants' and the Drop-Outs

The students whose social profile scores were markedly divergent from their academic achievement were studied in detail. The under-achiever is difficult to predict since some students who have excellent pre-medical grades, high MCAT scores and a positive social profile, may relax their efforts toward achievement once they gain admission to medical school. The over-achiever would seem to be a greater risk in terms of academic success. The intensity of effort used in achieving acceptable pre-medical grades and MCAT scores is an unknown quantity at the time of admission. However, it would seem that the student who expends great effort to achieve admission to medical school would be under continuous pressure to work at his maximum effort in the competitive situation of medical school. If such a student also has emotional problems, it is unlikely that he can work at his maximum effort.

Four of the five drop-outs reflected the situation of the over-achiever with emotional difficulties. These four students had better than average pre-medical grades and MCAT scores, but after a semester of medical school they had serious doubts about medicine as a career. Frequently these doubts resulted from emotional conflicts the students had experienced. Two of these students sought psychiatric consultation regarding their decision to leave school. The types of conflicts experienced by the drop-outs were varied and not discernible by objective measures at the time of admission.

It would seem, however, that the social profile approach would be of value in assessing the potentiality of an over-achiever. If an applicant chooses medicine with little or no support from others, feels less capable of coping with problems himself, is less able to perceive the adjustments and commitments involved in a medical career realistically, and is inflexible, it would seem that these factors, even in the face of pre-medical achievement, would be detrimental to over-achieving in medical school.

CONCLUSIONS

This study explored the potential use of social factors as predictors of academic success in the first year of medical school. The results indicated that a cluster of social factors distinguished students in the upper and lower thirds of their class, and appeared to be more closely associated with academic success than pre-medical grades and MCAT scores. None of these criteria, however, clearly distinguished students who dropped out of school. These tentative results are suggestive of the value of more detailed social and psychological information on applicants which would seemingly strengthen the admission procedure. Although objective measures such as pre-medical grades and the MCAT appear to be of value in disqualifying the clearly unable applicant, the use of these criteria in the more refined selection of qualified students appears to be of lesser value compared to data related to the background of the student. □

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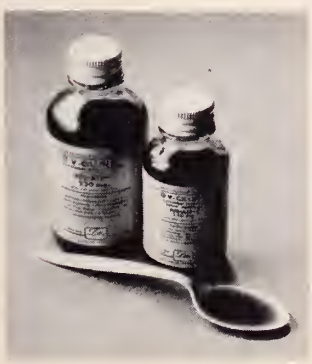
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Contraindication: V-Cillin K should not be administered to a patient with a history of penicillin hypersensitivity.

Warnings: In rare instances, the use of penicillin may cause acute anaphylaxis which may prove fatal unless promptly cantrolled. This type of reactian appears more frequently in patients with a history of sensitivity reactians ta penicillin and in those with bronchial asthma ar ather allergies. Resuscitative drugs should be readily available far emergency administratian. These include epinephrine and pressar drugs (as well as axygen far inhalation) for relief af immediate allergic manifestatians and antihistamines and carticosteraids for delayed effects.

Precautions: V-Cillin K shauld be used cautiously, if at all, in a patient with a strongly positive history af allergy.

In pralanged therapy with penicillin, and particularly with high parenteral dasage schedules, frequent evaluation of the renal and hematapoietic systems is recammended.

In suspected staphylacoccus infections, praper laboratary studies (including sensitivity tests) shauld be performed.

The use of penicillin may be associated with the overgrowth af pencillin-insensitive arganisms. In such cases, its administratian shauld be discantinued, and appropriate measures shauld be taken.

Adverse Reactions: Althaugh seriaus allergic reactions are much less camman with administration of oral penicillin than with intramuscular farms, manifestations af penicillin allergy may accur.

Penicillin is a substance of law taxicity, but it does passess a significant index of sensitization. The following hypersensitivity reactians associated with the use af penicillin have been reparted: skin rashes ranging fram maculopapular eruptians ta exfoliative dermatitis; urticaria; and reactions resembling serum sickness, including chills, fever, edema, arthralgia, and prastration. Severe and often fatal anaphylaxis has occurred (see Warnings). Hemolytic anemia, leukopenia, thrambacytapenia, and nephrapathy are rarely observed side-effects and are usually assaciated with high parenteral dosage.

Administration and Dosage: Far Tablets V-Cillin K and for V-Cillin K, Pediatric, the usual dosage ranges fram 125 mg. (200,000 units) three times a day to 500 mg. (800,000 units) every four haurs. Far infants, the daily dosage may be 50 mg. per Kg. af body weight divided inta three dases.

Beta-hemolytic streptococcus infectians withaut assaciated bacteremia may be treated with 200,000 ta 400,0000 units three times a day. Therapy should be continued for a minimum af ten days to prevent development af rheumatic fever and/ar ather seriaus camplicatians. Dosage far rautine streptococcus prophylaxis in patients with a histary of rheumatic fever or congenital heart disease may be 200,000 units ance ar twice daily. When such patients underga tonsillectamy, taath extraction, or other minar surgery, the praphylactic dase shauld be 500,000 units every six hours given twa days priar ta surgery and far twa days pastoperatively. If oral medication is not feasible an the day af surgery, parenteral therapy should be considered. Mild to maderately severe pneumococcus pneumania has been treated effectively with 250 mg. every six hours.

In staphylacaccus infections, 400,000 units ar mare shauld be given every six ta eight hours in conjunctian with indicated surgical procedures.

For gonorrhea in males, 500 mg. (800,000 units) every faur hours for three doses may be emplayed; in females, 500 mg. every faur haurs for six doses are recommended. Refractory infections generally respand to a secand treatment three to four days follawing completion af the first. Treatment of ganarrhea with severe camplications should be individualized, with prolonged and intensive treatment. Patients with a suspected lesion of syphilis shauld have a dark-field examination befare receiving penicillin and monthly serologic tests far a minimum of three manths.

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Carcinoid Syndrome Presenting as Acute Right Heart Failure

SAMUEL HALPERN, M.D.
ROBERT ARNOLD, JR., M.D.
JACK D. WELSH, M.D.

The following is a case of carcinoid syndrome that presented as right heart failure. Cardiac and biochemical manifestations of the disease are discussed.

MALIGNANT CARCINOID is being recognized more and more frequently. Many of these patients have been reported to have associated cardiac lesions. A recently encountered patient points up some of the important features of this disease.

The patient, a 54-year-old white lady, had repeated episodes of watery diarrhea for one year before her admission to the Oklahoma University Hospital in November, 1965. For six months she had noted flushing of her face and extremities, progressive dependent edema and shortness of breath. She had been treated with digitoxin and diuretics without effect, and two weeks before her admission the edema and shortness of breath became more severe and abdominal swelling occurred. Over a period of six months her weight had increased from 150 to 173 pounds. She began to have lumbar pain which increased in intensity until she could hardly lie down.

Physical examination showed an emaciated, flushed, white woman who had massive edema of the body below the level of the breasts and marked abdominal swelling. Her blood pressure was 120/60, pulse-100/minute and regular and the respirations were 40/-minute and labored. Examination of the head, eyes, ears, nose and throat was not remarkable except for evidence of weight loss. The neck veins were prominent and filled from below at 45°. Both A and V waves were present. A few bilateral basilar rales were present but the lungs otherwise were clear. The PMI was in the fifth intercostal space in the anterior axillary line, and an apical ventricular gallop was present. A grade III/VI holosystolic murmur which radiated into both lung fields was present at the left sternal border in the 4th intercostal space. A_2 was of normal quality while P_2 was decreased and indistinct. The abdomen was quite distended with generalized pitting edema of the abdominal wall and the superficial abdominal veins were prominent. The liver was hard, irregular, and extended 8 cm. below the right costal margin; the spleen was palpable 3 cm. below the left costal margin. Pelvic examination revealed dusky cyanosis of the mucous membranes and the pelvic organs were fixed by a diffuse woody edema. On rectal examination there was a large anterior extramucosal mass palpable at approximately 6 cm. There was 4+ pitting edema of the legs and thighs and severe

This study was supported in part by Training Grant T1 AM-5179 from the National Institutes of Health.

muscle wasting of the arms and shoulder girdles. The skin was dry, with a dusky cyanosis of the legs, abdomen, face, arms and chest which blanched on pressure.

The urine was normal, hematocrit 40%, white blood cell count 8,000/cu.cm., fasting blood sugar 102 mg%, blood urea nitrogen 36 mg%, cholesterol 108 mg%, total serum protein 6.3 gm% with 3.3/3.0 gm% A/G ratio. Alkaline phosphatase 6.0 Bessie Lowry units, total bilirubin 1.0 mgm%, SGOT 11, prothrombin time 14 sec. with a control of 12 seconds. Bromosulphalein retention was 16% in 45 minutes. The urine 5-Hydroxyindolacetic acid (5-HIAA) was positive at a 1:20 dilution and quantitative determination revealed 52 mgm/24 hour urine (normal 3-10 mgm/24 hours). D-xylose excretion was .735 gram/5 hr. urine (5 gram normal).

The chest roentgenogram showed cardiomegaly with a generalized ventricular enlargement and increased pulmonary vasculature. The electrocardiogram revealed a questionable old anteroseptal myocardial infarction and the phonocardiogram showed a pansystolic murmur to the right and the left of the sternum and a low intensity presystolic murmur in the same areas.

A barium enema revealed an extramucosal rectal mass which was not recovered in biopsies of the overlying mucosa, however, a few large foamy PAS positive macrophages were seen in the mucosa and submucosa.

Hospital Course — A satisfactory diuresis was achieved with digitoxin, mercuhydrin and Diuril and her weight decreased to 125 pounds. The liver remained large and irregular and the cyanosis of her skin persisted. An exploratory laparotomy was done on December 27, 1965, to determine the extent and resectability of the disease. A tumor 4 cm. in diameter was found in the terminal ileum as well as several large metastatic lesions in the liver. She was later transferred to the Oklahoma Medical Research Foundation, where weekly courses of 5-fluorouracil were given without effect. She died in intractable heart failure March 2, 1966. Permanent histologic sections revealed carcinoid tumor from both liver and ileum. Request for a post mortem examination was not granted by the family.

DISCUSSION

Involvement of the heart is a common finding in patients with carcinoid tumors, however, this appears to occur only in patients who have hepatic metastases from intestinal lesions or in those tumors drained by extrahepatic sources[3] such as the ovary. In all the series reviewed, the right side of the heart was far more frequently involved than the left. In the 21 cases of Thorson[2] where complete information on all parts of the heart was available, the right atrium was involved in 16, the right ventricle in 5, the tricuspid valve in 19, and the pulmonary valve in 20 of the patients. The tricuspid valve was involved but not hemodynamically affected in 7, insufficient in 7 and stenotic in only one. The pulmonary valve was stenotic in 18 people, insufficient in one and only once was it involved without hemodynamic impairment. Roberts and Sjoerdsma[1] in their series of 9 patients reported similar findings. The tricuspid and pulmonary valves were involved in all patients, with atrial involvement in 8, and right ventricular involvement in 7. They also found that tricuspid insufficiency and pulmonary stenosis were the predominant hemodynamic alterations. The pathologic changes in the tricuspid and pulmonary valves were the same, however, with thickened cusps and constricted, fixed orifices. They believed that the hemodynamic alterations were a function of valve size with fixing of the larger tricuspid orifice being more likely to result in insufficiency, while fixing of the smaller pulmonary orifice was more likely to result in a functional stenosis.

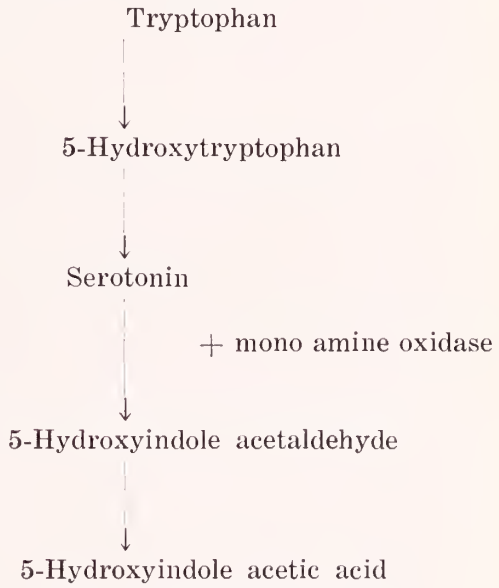
Left sided carcinoid heart disease is less common, although the incidence in association with right heart lesions approaches 30 per cent.[1, 2] Several cases with intracardiac communications have been reported,[5, 6] but recent literature casts doubt on the hypothesis that the lungs destroy the pathogenic chemicals so that a left sided lesion[1, 2, 7] requires a right to left intracardiac communication. In Thorson's 21 patients[2] there were six with left heart changes. The mitral valve was involved in six, the left atrium in one, the left ventricle in one, and the aortic valve in one. In none of these people did functional disturbances occur and none had intracardiac communications.

Roberts and Sjoerdsma,[1] in their series of nine patients, had three with left heart changes. The mitral valve was involved in all three, the left ventricle twice and the aortic valve once. There were no intracardiac communications and none of the patients had bronchial metastases. The one patient in their series with a patent foramen ovale did not have left heart involvement.

The question of whether or not bronchial carcinoids cause isolated left heart lesions is not yet settled because the left side of the heart is commonly affected by a variety of disease processes and it is often difficult to determine the etiology of the changes found. Murmurs, endocardial fibrosis and thickening of valve cusps have been reported in association with isolated serotonin-producing bronchial tumors.[8, 9, 10] However, studies incorporating the histological criteria of McDonald and Robbins for identifying true carcinoid changes[3] have not been reported.

McDonald and Robbins[3] studied the autopsy findings in patients with the carcinoid syndrome, rheumatic heart disease, collagen disease and congenital fibroelastosis. They concluded that the fibrous changes seen on the valve cusps and mural endocardium in patients with carcinoid heart disease are specific for this condition. Their work and that of others[1, 2, 3] have shown a focal or diffuse collection of a homogeneous, metachromatic, pale eosinophilic ground substance which surrounds scattered, oval or round spaces containing small pyknotic mononuclear cells. The tissue is free of elastic fibers, but reticulum fibers are present. In the ground substance adjacent to the endocardium, blood vessels and perivascular accumulations of lymphocytes and plasma cells are abundant. Increased numbers of mast cells have also been noted.[3] The connective tissue plaque is superimposed on a normal endocardium and intact internal membrane.

Facial flushing, diarrhea, right sided heart lesions, malabsorption, liver metastases, hypotension and increased 5-HIAA in the urine associated with the presence of a carcinoid tumor is commonly referred to as the carcinoid syndrome. The biochemistry involved in this malady is extremely complex and can be covered only superficially in this paper. It was once believed that the only metabolic abnormality responsible for the symptoms of the syndrome was caused by increased levels of serotonin. This substance is normally found in the body, 90-95% being localized in the gut.[2] Urinary 5-HIAA, the end product of the metabolism of serotonin drops to very low levels in the normal person. The small amount of extraintestinal serotonin is distributed among the platelets, spleen and brain. Virtually all of the blood serotonin is associated with the platelets. The platelet serotonin often increases to 20 times the normal level in the carcinoid syndrome and it may also occur free in the plasma. The normal intestine contains 2-15 u grams serotonin/gram while in a carcinoid tumor this may rise to as much as 2 mg/gram.[2] The metabolic pathway for serotonin is as follows:



From this diagram it is evident that tryptophan is the precursor of serotonin and that monamine oxidase degrades it to the urinary excretion product, namely 5-HIAA which is the basis for the diagnostic test for the carcinoid syndrome. When serotonin is given orally, 80-100 per cent is excreted in the urine as 5-HIAA within hours, thus food products containing this amine will give false positive tests for carcinoid syndrome.[20] Bananas, tomatoes, red plums, avocados and egg plant all have been implicated. Normally the urinary excretion of 5-HIAA is 2-9 mg/24 hr. and in the carcinoid syndrome it may range from 25 to 1500 mg/24hr. While it is accepted that hepatic

metastases produce the carcinoid syndrome, they are NOT necessary for increased production of 5-HIAA. One may actually diagnose a carcinoid tumor with a urinary 5-HIAA test without the patient having the fully developed syndrome. It was once thought that serotonin was destroyed in the lungs, thus causing only right sided heart lesions, however, there is no A/V difference in serotonin levels in the lungs, implicating some other metabolite. Bulbring and Lin[23] noted that serotonin would cause hypersensitivity of the gut by decreasing its threshold response to stimulation and thereby increasing peristalis. Hendrix[24] found that parenteral serotonin increased the intestinal tone in 87 per cent of his human subjects. Whether anticholinergics block this effect is argued among investigators. Thus, the diarrhea and parasympathetic portion of the carcinoid syndrome may be secondary to serotonin.

Not all symptoms can be attributed to serotonin. Robertson, Pearl and Andrews[20] questioned the role of serotonin in producing the flushed faces in patients with the carcinoid syndrome. They cannulated the hepatic vein of a patient with the disease and found increased blood serotonin levels. However, they also observed that emotional stress, food, alcohol, compression of tumor tissue and parenteral epinephrine or norepinephrine caused flushing. After injecting epinephrine and norepinephrine into two patients with carcinoid syndrome, they noted that both became flushed. Next they gave serotonin parenterally and produced a marked pressor response but very little flushing. They postulated that the pressor amines acted on the tumor tissue and stimulated the release of some unknown substance that produced a flush. In spite of epinephrine stimulation producing a flush, it does not yield increased serotonin concentration in vena caval blood.

In 1963 Sjoerdsma and Levine[26] reported further evidence to indicate that serotonin is not the only metabolite that causes flushing. They obtained a typical carcinoid flush using epinephrine, norepinephrine or Isuprel in patients with carcinoid syndrome. They also demonstrated that other pressor amines (aramine, tyramine) caused a flush but that aramine did not cause hypotension as did the others. (This has practical implications should a vasopressor become necessary in the carcinoid patient). Sjoerdsma and Levine further found that regitine and dibenzyline blocked the facial flush of the carcinoid syndrome and the urinary excretion of 5-HIAA. These drugs did not affect the tumor growth in any way. These workers felt that the flush following epinephrine was of such specificity that a positive test would virtually establish the diagnosis of carcinoid.

In a review by Oates and Melmon[14] the causes of carcinoid symptoms were discussed in the light of new biochemical evidence. They noted that kallikrein, an enzyme, was increased in the blood of patients with carcinoid tumors metastatic to the liver, but not in normal controls. Normal levels of kallikrein were present in a patient who had carcinoid disease but no flushes. Kallikrein was elevated in the serum of those with carcinoid flushes and it increased even higher (6-8X) after parenteral epinephrine stimulation. Earlier investigations demonstrated that kallikrein causes formation of peptides that are active in producing the flush in man. The following scheme has been postulated.

Epinephrine acts on tumor metastasis to liberate

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kallikrein—This releases from plasma
kininogen—which becomes
kallidin—which is converted by a peptidase to
bradykinin—This substance contributes to the carcinoid

flush, but probably not alone since serotonin still will alter the response to bradykinin. An additional factor in some carcinoid patients may be histamine, especially in those with gastric carcinoid.

SUMMARY

1. Cardiac involvement is very common in patients with carcinoid syndrome and may be the predominant presenting complaint.
2. The right heart is most often affected but left heart changes also occur even in the absence of interatrial or intraventricular communications.
3. The flush of carcinoid patients is caused by several different substances liberated from carcinoid tissue.
4. Epinephrine injection (10 u gram) will cause the carcinoid flush and may be used as a diagnostic test.
5. The best diagnostic test is detection of increased urinary 5-HIAA.
6. Various pressor amines may cause severe hypotension in this disease and if one must be used aramine is the drug of choice.
7. Regitine or dibenzyline may be used to control symptoms of carcinoid syndrome but they will not alter the malignant tumor in any way. Care must be taken in such treatment because severe orthostatic hypotension may occur.
8. 5-fluorouracil therapy was an unsuccessful palliative measure in our patient. □

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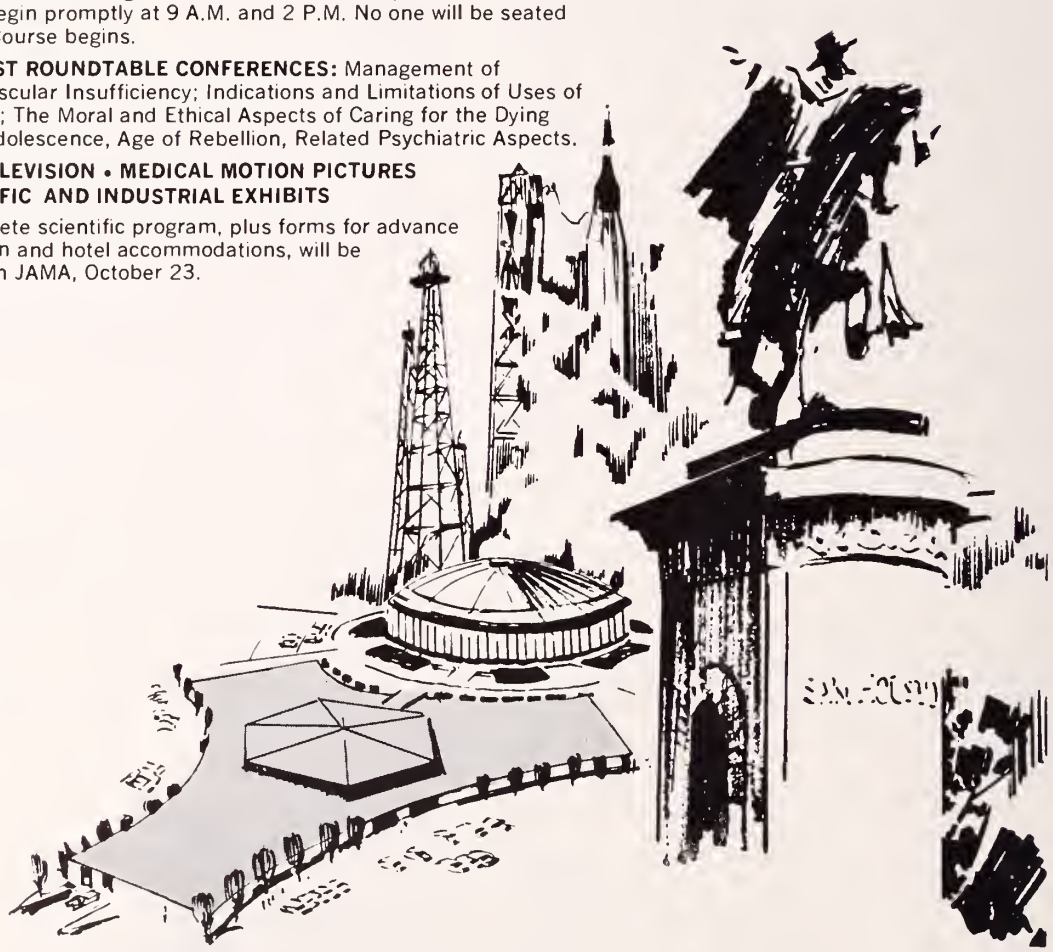
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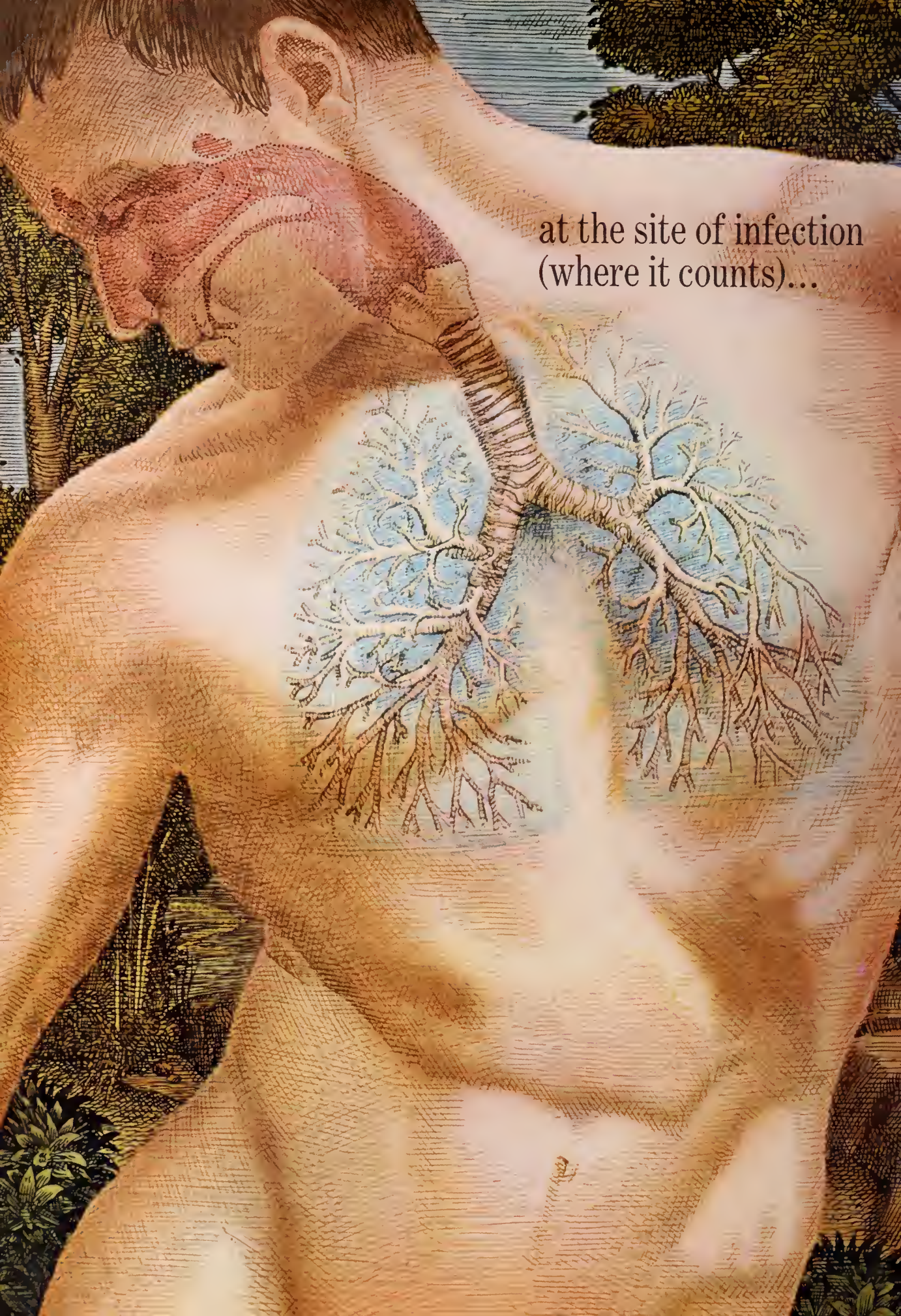
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The antibiotic has been used very successfully in staphylococcus infections. Good therapeutic results have been obtained in soft-tissue infections, abscesses, cellulitis, carbuncles, wound infections, and furunculosis.

In serious staphylococcus infections, erythromycin preparations should be used only in combination therapy with other antimicrobial agents. As is the case with any treatment regimen used in these severe conditions, surgical procedures should be performed when indicated, and large dosages of the antimicrobial agents should be employed. In this fashion, Ilosone has been effective in staphylococcus pneumonia, osteomyelitis, septicemia, empyema, and meningitis.

Multiple 500-mg. doses of the drug have also been useful in gonorrhea and syphilis. Since penicillin is the drug of choice for the treatment of syphilis and gonorrhea, erythromycin estolate should be employed for these infections only in patients with a history of penicillin allergy. Also, other infections due to susceptible bacteria in patients known to be hypersensitive to penicillin or other antibiotics may be considered for treatment with Ilosone.

Contraindications: Ilosone is contraindicated in patients with a known history of sensitivity to this drug and in those with preexisting liver disease or dysfunction.

Adverse Reactions: Data obtained from seven years' use of propionyl erythromycin ester and erythromycin estolate (Ilosone) indicate that hepatic dysfunction with or without clinical jaundice may occur during or following courses of therapy with the drug.

Changes in liver function tests in such cases have been indicative of intrahepatic cholestasis. The symptoms appear to be the result of a form of sensitization. The initial symptoms have developed in some cases after a few days of treatment but generally have followed one or two weeks of continuous therapy or several courses of the drug. Symptoms reappear promptly, usually within forty-eight hours, if the drug is readministered to sensitive patients. Eosinophilia was noted in peripheral blood counts. The findings readily subsided without apparent residual effects when treatment was discontinued. Recovery was delayed in one reported instance. The physician indicated in this case that either drug-induced jaundice or viral hepatitis may have been responsible for the findings.

In one clinical study involving ninety-three patients treated with the antibiotic, three cases of jaundice were observed and an additional eleven cases developed some changes in liver function tests. Three of the patients had abnormal liver function tests a second time on readministration of the drug.

Even though it is assumed that not all cases of jaundice have been reported, it seems clear that the number is small compared with the amount of drug that has been used. Reported cases have included persons in whom there had been administered other drugs known to be associated at times with hepatic side-effects and cases in which the presence of viral hepatitis or other disease may have been responsible for the findings. In some of the cases, associated gastro-intestinal symptoms simulated the colic of biliary tract disease. In other instances, clinical symptoms and results of liver function tests resembled findings in extrahepatic obstructive jaundice. It appears that the occurrence of jaundice after administration of Ilosone is infrequent, but further investigations are being made to estimate its incidence more accurately.

In those cases mentioned above in which jaundice appeared to be definitely related to use of the drug, laboratory findings were characterized by increased direct-reacting bilirubin, elevated alkaline phosphatase levels, negative or weakly positive cephalin flocculation and thymol turbidity tests, elevated serum glutamic oxalacetic transaminase levels, peripheral eosinophilia, and normal cholecystograms.

Individual idiosyncrasy seems evident since jaundice has not been reported in other patients taking prolonged courses of the medication. Patients with chronic infection have been given 1 to to 2 Gm. of the drug daily for periods of two to six months, and patients with rheumatic fever have taken prophylactic doses of 0.5 Gm. daily for two years without difficulty. In one group of 144 patients who received the drug daily for two years, no jaundice was noted. It was of interest that members of six of these patients' families, who were not taking the drug, had episodes of jaundice during the study period.

Transaminase and serum alkaline phosphatase levels were determined in a group of fifty-four adults and children who took 250 mg. of Ilosone daily for an average of sixteen months as rheumatic fever prophylaxis. The results were compared with those of a similar group of forty-four patients who received penicillin. There were no cases of jaundice in either group. Elevation of SGPT and serum alkaline phosphatase levels during the course of treatment was observed in one patient treated with Ilosone and in two patients treated with penicillin. Seven other patients in the group receiving Ilosone and four others in the penicillin group showed elevations in one of the tests at some time during administration of the drugs.

Very satisfactory therapeutic results, without toxicity, were reported in 102 pediatric patients who received short-term (ten-day) courses of Ilosone in the treatment of streptococcus infections. Results of liver function tests in these patients were comparable to those in a similar control group who had received penicillin.

Gastro-intestinal disturbances not associated with hepatic effects are observed in a small proportion of individuals as a result of a local stimulating effect of the medication on the alimentary tract; however, the normal intestinal gram-negative bacterial flora is not appreciably altered by erythromycin drugs.

Although allergic manifestations are uncommon with the use of erythromycin, there have been occasional reports of urticaria, skin eruptions, and, on rare occasions, anaphylaxis.

Administration and Dosage: Ilosone is administered orally.

Ilosone Pulvules®, Ilosone Liquid 125, Ilosone, 125, for Oral Suspension, Ilosone Drops, Ilosone Chewable Tablets.

For infants and for children under twenty-five pounds of body weight, the usual dosage is 5 mg. per pound every six hours; for children twenty-five to fifty pounds, 125 mg. every six hours. (Tablets Ilosone Chewable should be chewed or crushed and swallowed with water.)

For adults and for children over fifty pounds, the usual dosage of Ilosone is 250 mg. every six hours.

For severe infections, these dosages may be doubled.

When larger doses are indicated, parenteral erythromycin therapy should be considered.

In the treatment of syphilis, the recommended total dosage is 20 to 30 Gm. given in divided doses for a period of ten to fifteen days. Close follow-up of the patient is necessary since erythromycin drugs have not had adequate evaluation in all stages of syphilis. Examinations of spinal fluid are recommended as part of the follow-up therapy.

For gonorrhea, 500 mg. four times a day for four days are recommended. In the treatment of gonorrhea, patients with a suspected lesion of syphilis should have a dark-field examination before receiving antibiotics, and monthly serologic tests should be made for a period of three months.

How Supplied: Pulvules Ilosone, Capsules, N.F., 125 and 250 mg. (equivalent to base), in bottles of 24 and 100.

Ilosone Liquid 125, Oral Suspension, U.S.P., 125 mg. (equivalent to base) per 5-cc. teaspoonful, in 60-cc. and pint-size packages.

Ilosone, 125, for Oral Suspension, N.F., 125 mg. (equivalent to base) per 5-cc. teaspoonful, in 60 and 150-cc.-size packages.

Ilosone Drops, 5 mg. (equivalent to base) per drop, in 10-cc.-size packages, with dropper calibrated at 25 and 50 mg.

Tablets Ilosone Chewable, N.F., 125 mg. (equivalent to base), in bottles of 50. [032767]

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Additional information available to physicians upon request.
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Effects of Anesthetic Agents on Blood Coagulation

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WALTER H. MASSION, M.D.*

Is the anesthetic agent responsible for excessive bleeding during surgery? This study shows that cyclopropane, halothane, and ether have no significant effects on blood clotting but may increase capillary blood flow.

IT HAS BEEN CLAIMED that certain anesthetic agents may be responsible for an increased tendency to bleed during surgery. In theory, an increased bleeding tendency due to the anesthetic agent could be caused by at least three mechanisms: (1) the agent may interfere with the normal processes of blood coagulation, (2) it may cause peripheral vasodilation and capillary engorgement or (3) bleeding could be enhanced by an elevation of arterial or venous pressure. This paper is concerned with the first of these possible mechanisms.

A biochemical interference with coagulation has been reported for chloroform which appears to prolong the prothrombin time[1]. Ether anesthesia under certain conditions has been shown to accelerate fibrin formation and decrease plasma coagulation time to 75 per cent of normal.[2] An anesthetic agent often implicated as a probable cause of profuse bleeding during surgery is cyclopropane.[3, 6, 7] One study by McLaughlin[10] did indeed show that the blood loss from a standard skin puncture was elevated during cyclopropane anesthesia when compared with ether anesthesia. He explained his results by the occurrence of a peripheral vasodilation compounded by CO_2 accumulation. However, a direct effect of these agents on the blood clotting process was not investigated and could not be excluded. It was the aim of this study to determine whether cyclopropane, halothane, and ether have a direct effect on the blood clotting process.

METHODS

Four mongrel dogs, weighing between 13 and 20 kilograms were used. The animals were dewormed and kept in individual cages during the study. They were fed a daily balanced diet of commercial dog food (Friskies) plus horse meat (Vigo). Water was given *ad libitum*. For control measurements, the animals were anesthetized with pentobarbital (30) mg./kg.) as the base anesthetic. The anesthetic gases were superimposed on the base agent during the experimental periods. The femoral vein was cannulated against the flow of blood with a 16 gauge polyethylene catheter. The lumen of the catheter was kept open by a continuous flow of sterile normal saline (approximately two ml. per minute). To avoid any possible effects of circulating catecholamines resulting from excitement, the blood was not

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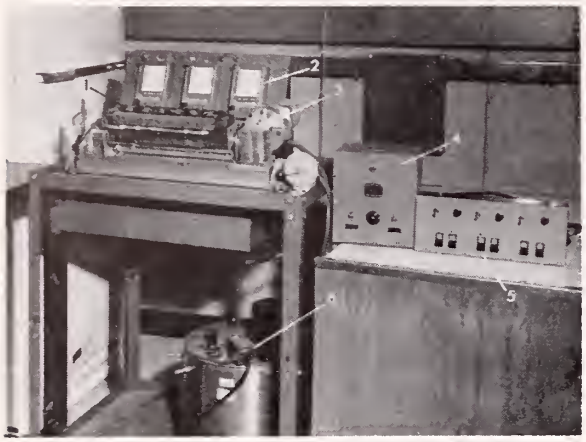


Figure 1: Automatic Blood Clotting Apparatus.
1. Clotting chamber containing light source and photocells.
2. Recorder.
3. Motor and tilting transmission.
4. Constant temperature control unit.
5. Controls for individual clotting ports.
6. Constant temperature water bath.

sampled until one hour after the induction of anesthesia. After discarding the dead space fluid, 13 ml. of blood were drawn by the two syringe techinque[11] and divided into six aliquots of two ml. each. Three aliquots were placed into glass clotting tubes and three were placed into siliconized clotting tubes. A Lee-White clotting test[9, 11] was performed on both sets of clotting tubes. The time between drawing the blood and clot formation in all three tubes was defined as the clotting time.

The clotting measurements were made in an automatic, programmed clotting apparatus designed by Werthessen[14] (figure 1). This apparatus was constructed to standardize certain operator-dependent variables which tend to decrease accuracy when not controlled. They are: (1) duration of tilt of blood sample, (2) frequency of tilt, (3) angle of tilt, and (4) temperature of sample during the entire clotting process. The clotting tube containing the blood sample was inserted between a light source and a photocell. Once every minute the samples were tilted in three seconds 100° from vertical to 10° below the horizontal plane and held in that position for eight seconds, then returned to an upright position in three seconds. Hence, the sample was in an upright position 46 seconds in every minute. The clotting time was determined by a decrease and eventual failure of the blood to flow along the container wall between the light source and photocell. A graphic record of the change in blood viscosity was produced permitting determination of the clotting time to less than one minute with an accuracy of ±30 seconds.

One hour after the blood was drawn, the serum was removed from each sample by centrifugation (3,000 RPM for four minutes). The residual prothrombin was determined for each two ml. aliquot of blood by the method of Quick[12]. Blood samples were maintained at 37° C. from the time they were taken until they were centrifuged one hour later.

The animals were studied at weekly intervals. During the first and second week, control measurements were obtained to determine the normal range for each animal and weekly variance of the parameters measured. Anesthetic agents were administered during the third, fourth, and fifth weeks by an endotracheal tube and a Harvard respirator. The anesthetic gases were delivered

TABLE 1

Control Clotting Times*

Dog	Glass Tubes before	Glass Tubes after	Siliconized Tubes before	Siliconized Tubes after
1	7.3	7.5	10.0	8.5
2	8.5	7.9	10.8	10.1
3	6.8	7.6	12.0	10.6
4	9.1	7.9	14.4	12.9
Average	7.9	7.7	11.8	10.5

* Time in minutes from drawing to clot formation in last tube. Each figure mean of four values.

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TABLE 2
Control Prothrombin Times (in Seconds)*

Dog	Glass Tubes before	Glass Tubes after	Siliconized Tubes before	Siliconized Tubes after
1	29	33	17	20
2	24	26	17	16
3	37	41	18	19
4	50	42	17	16
Average	35	36	17	18

* Each value represents mean of four determinations.

into a five liter reservoir bag connected to the inspiratory port of the respirator. There was no rebreathing of expired gases. Cyclopropane was given in a concentration of 20 per cent, halothane as two per cent and ether as five per cent with 21 per cent oxygen and an inert carrier gas[5]. Six minutes and 11 minutes before the introduction of each inhalation agent two additional control samples were taken. A different experimental agent was evaluated each week. All four dogs received the three anesthetic agents in successive weeks.

RESULTS

The results are shown in tables 1 to 4. Tables 1 and 2 show the control values for each dog collected during the two weeks preceding the administration of the experimental agents. The "before" and "after" values were obtained at time periods comparable to the administration of anesthetic gases in later runs. Averages for the clotting times are shown in table 1 and averages for the prothrombin times are shown in table 2. There was no significant difference between "before" and "after" values under pentobarbital anesthesia.

Tables 3 and 4 show the values collected before and during the experimental runs. They are given with respect to administration of the inhalation anesthetic. The "before" samples constitute an additional control value immediately preceding the experiment. The "after" samples were drawn at 30 and 40 minutes after starting the administration of ether or cyclopropane and at ten and 20 minutes after starting the administration of halothane. The shorter exposure to halothane was chosen to avoid the cardiovascular effects of this drug which can cause hypotension. There were no significant changes in the clotting time in either the glass or siliconized tubes following the administration of cyclopropane and ether. Following the administration of halothane an increase in clotting time of the blood kept in siliconized tubes was seen in all four dogs. No increase was seen in the clotting times of blood samples clotted in glass tubes. The change in clotting time observed in siliconized tubes (i.e. "before" versus "after" values) is significantly different from the changes observed for the clotting time of blood permitted to clot in glass tubes ($p<.01$). The average of the silica clotting times following halothane administration is seen to be higher than the averages following both ether and cyclopropane and the averages for the two week control data.

Table 4 contains the values of the serum prothrombin times before and after the addition of the experimental agents. As can be seen by comparing table 2 with the experimental values, there were no significant changes as a result of the administration of any of the anesthetic agents.

DISCUSSION

In general, our data confirm the findings of Vanderveen *et al.*[13] and Howland *et al.*[8] but are in apparent conflict with others[3,6,7,10] who report prolonged oozing during cyclopropane anesthesia. Most of these studies, however, were not based on the speed of clot formation but reflected the duration of bleeding from a standard skin puncture. This

TABLE 3
Clotting Times (in minutes)*

Dog	Cyclopropane Glass before	Cyclopropane Glass after	Cyclopropane Silica before	Cyclopropane Silica after	Ether Glass before	Ether Glass after	Ether Silica before	Ether Silica after	Halothane Glass before	Halothane Glass after	Halothane Silica before	Halothane Silica after
1	5.5	5.8	9.8	10.3	5.8	5.5	7.8	6.8	7.5	7.0	9.5	11.0
2	7.0	6.8	9.5	8.8	4.8	6.3	7.8	8.8	6.0	6.3	10.8	12.3
3	6.0	5.5	6.0	9.0	7.0	7.3	11.0	13.3	6.3	3.8	9.8	16.3
4	6.8	6.5	8.8	11.0	7.8	6.8	9.3	8.8	6.5	7.0	10.0	13.0
Average	6.3	6.2	8.5	9.8	6.4	6.5	9.0	9.4	6.6	6.0	10.0	13.2

* Each value represents mean of two determinations.

TABLE 4
Prothrombin Times (in seconds)*

	Cyclopropane				Ether				Halothane			
	Glass		Silica		Glass		Silica		Glass		Silica	
Dog	before	after	before	after	before	after	before	after	before	after	before	after
1	26	26	16	15	19	18	13	16	27	28	19	16
2	47	31	33	20	32	28	17	21	55	49	22	19
3	25	24	21	17	25	24	16	14	52	33	28	32
4	50	45	29	26	37	41	23	22	52	78	23	26
Average	37	32	25	20	28	28	17	18	47	47	23	23

* Each value represents mean of two determinations.

test, as emphasized by Bunker[4], is not precise under the best of circumstances but it is particularly unreliable for studies of anesthetic agents since the venous pressure is intentionally elevated by the testing procedure. Thus, the peripheral venous dilation which occurs normally under cyclopropane and halothane anesthesia[5] will be aggravated. Under the conditions of our experiment, an increase in clotting time was observed in all four dogs following the administration of halothane. This increase was most likely not a reflection of a change in the utilization of prothrombin since the residual serum prothrombin did not change. The significance of this observation must await further investigation.

SUMMARY

The effects of various anesthetic agents on blood clotting time and serum prothrombin time were studied in dogs. After stabilization of control values with pentobarbital anesthesia, the animals were ventilated with 20 per cent cyclopropane, two per cent halothane, or five per cent diethyl ether at weekly intervals. All gas mixtures contained 21 per cent oxygen and were administered at a constant rate and volume of ventilation. Blood samples obtained at fixed intervals were permitted to clot in glass and siliconized tubes in an automatic, programmed clotting apparatus. There were no significant changes in the clotting times in either the glass or siliconized tubes following the administration of cyclopropane and ether. Halothane administration produced an increase in clotting time of blood kept in siliconized tubes. There were no significant changes of the serum prothrombin times before and after the addition of anesthetic gases. □

ACKNOWLEDGMENT

The authors acknowledge the technical assistance of Mrs. Paula Downs and express their gratitude to Doctor N. T. Werthessen for his counsel in the design of this study.

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ABSTRACTS

IATROGENIC WATER INTOXICATION

A 21-year-old para 1 gravida 2 was admitted to the hospital for vaginal bleeding of four days duration. Examination disclosed the problem to be one of incomplete abortion, and an intravenous drip of oxytocin was started. During the ensuing 18 hours, she received 180 U of oxytocin in 8,000 ml. of five per cent dextrose in water. Following dilatation and curettage she became stuporous, had a seizure, and was noted to have a puffy appearance. During the six hour period prior to the seizure, the patient had excreted a total of 50 ml. of urine, which had a specific gravity of 1.035. Her serum sodium was found to be 121 mEq. per liter, potassium 2.8 mEq. per liter, and BUN was 7 mg. per cent. The diagnosis of water intoxication was made, and she was treated with 62.5 gm. of mannitol intravenously during the next 12 hours. A good diuresis (5,375 ml.) ensued, and her serum sodium returned to more reasonable levels. She remained confused, however, until the fourth hospital day and had amnesia of the preceding three days. Subsequent tests established the presence of normal antidiuretic hormone mechanisms in the patient.

Four other patients receiving large amounts of oxytocin have been reported to develop this syndrome, and it appears to be dose-related. Doses of oxytocin below 45 mU per minute will cause some mild antidiuretic activity, but above this level antidiuretic activity can be maximal. The problem of water overload can be circumvented by increasing the concentration of the oxytocin in the drip solution when large amounts of the drug are required.

Reviewer's Note: The necessity of maintaining reliable input and output records on all patients receiving drugs affecting urine secretion is amply shown herein

Water Intoxication Induced by Oxytocin Administration. Jane Self. American Journal of Medical Sciences **252**: 573-574 (November) 1966.

CARCINOMA OF THE PROSTATE

This report concerns the six year follow-up results of a study undertaken by 14 Veterans Administration Hospitals to evaluate the standard forms of treatment for cancer of the prostate. The 2,052 patients in the study were new, untreated patients who were assigned to treatment groups randomly. All men in Stages I and II (localized nodule, no roentgenographic evidence of metastases) had radical prostatectomy; half of them were given 5 mgm. diethylstilbestrol daily, the other half received placebos. Patients in Stage III (extraprostatic extension but no roentgenographic evidence of metastases) and Stage IV (roentgenographic evidence of metastases) were assigned to four treatment groups randomly: estrogen only, orchiectomy with placebo, orchiectomy with estrogen, and placebo alone. Stage I, II and III patients who received estrogens had a shorter survival than those given a placebo. Patients in Stage IV on a placebo only had survival rates similar to those treated by surgery and/or estrogens. Over half of the deaths were due to other diseases; patients not receiving estrogens had a higher mortality from cancer of the prostate while those on estrogens had more deaths from other causes thus confirming the clinical impression that estrogens reduce the mortality from cancer of the prostate. The higher mortality rate among the estrogen-treated patients seemed to be from cardiovascular disease. There was no increase in the mortality rate from pulmonary emboli.

Patients with Stage I and II disease did not seem to derive any clinical benefit from estrogens; those in Stages III and IV were much less likely to develop an enlarged, hard prostate or extension of the malignancy beyond the gland. There was little difference in the pain relief with or without estrogens. Anemia was more common with estrogen therapy. The results of this study suggest that treatment with estrogens or orchiectomy should be withheld until symptomatic relief becomes necessary. Earlier treatment apparently is of little value.

Reviewer's Note: This study reflects the value of re-evaluating clinical impressions and how often new studies will raise questions concerning other fields. Why the increased number of cardiovascular deaths in patients on estrogens? Why did these patients have more anemia?

Treatment and Survival of Patients with Cancer of the Prostate. The Veterans Administration Cooperative Urological Research Group, Surg., Gynecology and Obstetrics, **124**: 1011-1017, 1967.

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OSMA JOURNAL / heart page

The Hemodynamic Mechanism of Pulsus Paradoxus

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JIRO NAKANO, M.D.**

Pulsus paradoxus is characterized by a regular arterial pulse with exaggerated waning and waxing during natural inspiration and expiration, respectively. The first description of this phenomenon was made independently by Griesinger and Vierordt in 1854 and by Fox in 1869. However, in 1873, Kussmaul[1] not only named pulsus paradoxus, but also described more precisely the clinical features and possible underlying mechanisms of this phenomenon. In normal individuals, a mild degree of respiratory variation in the intensity of arterial pulse exists due to a transient increase in the pulmonary blood volume and consequently to a decrease in the venous return to the left heart during inspiration. Pulsus paradoxus is simply an exaggerated form of the normal respiratory variation in arterial pulse. In this sense, pulsus paradoxus seems to be a misnomer. Sharp *et al.*[2] oppose the further usage of this terminology, and instead proposed a more descriptive term, "Exaggerated respiratory pulse variation."

In a case with pulsus paradoxus, measurement with sphygmomanometer usually reveals a fall of systemic arterial systolic pressure by 10 mm Hg or more during inspiration. In extremely severe cases of acute cardiac tamponade, pulsus paradoxus may not be demonstrated because of a pronounced reduction in left ventricular stroke volume. Schreiber differentiates "true" from "false" paradoxical pulse. True paradoxical pulse (1) must be felt in all accessible arteries, (2) does not require deep inspiration, and (3) should not be accompanied by irregularity of heart beats. Pulsus paradoxus may be caused by many clinical conditions as outlined in table I.

TABLE I: ETIOLOGY OF PULUS PARADOXUS

1. Cardiac tamponade due to (a) pericardial effusion or hemorrhage, and to (b) pericardial neoplasm.
2. Chronic constrictive pericarditis.
3. Mediastinal effusion or neoplasm.
4. Tracheobronchial obstruction and forced respiration.
5. Pulmonary embolism and emphysema.
6. Cardiac failure.

The circulatory phenomenon of pulsus paradoxus has aroused the interest of many cardiologists and cardiovascular physiologists. Different hemodynamic mechanisms responsible for the causation of pulsus paradoxus in patients with cardiac tamponade has been postulated by several groups of investigators. With cardiac tamponade it appears that inspiratory decreases in left ventricular filling and consequently stroke volume are responsible for pulsus paradoxus. However, the primary factors which trigger the inspiratory decrease in ventricular filling have been conjectural among the investigators.

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The first theory was proposed by Kussmaul. He stated that pulsus paradoxus is caused by a pericardio-sternal adhesion to the aorta. In such patients, inspiration merely causes a restrictive traction of the fibrotic lesions and exerts an impeding effect on the aorta, thereby causing small or even absent peripheral arterial pulse. Gauchat and Katz, however, were unable to demonstrate such adhesions in their postmortem examinations of patients who had had pulsus paradoxus.

The second theory was propounded by Wenckebach in 1910. He ascribed the cause of pulsus paradoxus to the increased intrapericardial pressure by the physical distortion of the pericardial sac due to the inspiratory traction by the diaphragm or thoracic cage. In 1956, Wood further elaborated this hypothesis and stated "During inspiration, descent of the diaphragm stretches the already tense pericardium and increases the pressure within it; cardiac filling is then impaired, and stroke output and pulse pressure fall." Recently, Dock studied experimental pericardial effusion in the fresh cadavers, and examined the intrapericardial fluid-volume-pressure relationship. He found that, when the diaphragm was tracted toward the abdominal cavity or when the sternum was lifted, the intrapericardial pressure rose significantly in a given pericardial fluid volume. Thus, he supported the pericardial traction theory to explain the occurrence of pulsus paradoxus. However, in anesthetized dogs, both Morgan *et al.* and Shabbetai *et al.* could not demonstrate the increased intrapericardial pressure by similar manipulations of the pericardial sac. Presently, experimental data are not sufficient to explain fully the inspiratory traction of the pericardial sac as the sole or major mechanism for pulsus paradoxus in individuals with cardiac tamponade.

In 1924, Katz and Gauchat[3] studied pulsus paradoxus by inducing cardiac tamponade in anesthetized dogs. They found that, with cardiac tamponade, the greater negative intrathoracic pressure induced by inspiration was transmitted to the superior vena cava to a greater degree than to the right atrium which was compressed by the increased intrapericardial pressure. Consequently, the pressure gradient between superior vena cava and right atrium, which is responsible for the changes in the effective systemic venous return, reduces considerably during inspiration, and results in decreases in the right ventricular filling and stroke volume. On the basis of this observation, they postulated that the similar mechanism which may be operating in the left heart is most likely responsible for the production of pulsus paradoxus. Sharp *et al.*[2] produced an experimental cardiac tamponade in human subjects. Although neither pulmonary venous pressure nor left atrial pressure was actually measured in their study, they concluded that the hemodynamic mechanism proposed by Katz and Gauchat would be the most appropriate one for pulsus paradoxus in patients with cardiac tamponade. In anesthetized dogs, Golinko *et al.*[4] found that inspiration caused proportional reductions in the intrathoracic, pulmonary venous and left atrial pressures in control anesthetized dogs. On the other hand, in dogs with cardiac tamponade, inspiration does cause a decrease in pulmonary venous pressure without producing any significant change in the left atrial pressure. Hence, they confirmed the hypothesis postulated by Katz and Gauchat, and Sharp *et al.* by demonstrating that inspiration results in a decreased or even reversed pulmonary vein-left atrial pressure gradient. Using the cineangiographic technique, Golinko *et al.* also showed that with inspiration, the oil droplets injected in the left atrium moved back into the pulmonary veins.

In 1952, Dornhorst *et al.*[5] derived a different hypothesis for the causative mechanism of pulsus paradoxus using an experimental heart model. They postulated that the increase in the right ventricular filling would take place whether cardiac tamponade is present or not. With normal intrapericardial pressure, the increase in the right ventricular filling during inspiration would not affect the hemodynamic events in the left heart. However, with cardiac tamponade, the inspiratory increase in the right ventricular filling raises the intrapericardial pressure, although the negative intrathoracic pressure created by inspiration may tend to decrease the intrapericardial pressure. The net effect of two counteracting actions induced by inspiration is a significant elevation of the intrapericardial pressure, which de-

creases left ventricular filling and stroke volume. Hence, they concluded that this decrease in left ventricular filling triggered by the inspiratory increase in right ventricular filling is the most likely mechanism for pulsus paradoxus. The elaborate experimental study was made by Shabetai *et al.*[6] to examine this hypothesis. These investigators found that inspiration increased systemic venous return to the right and elevated the intrapericardial pressure in dogs with cardiac tamponade. The enhancement in the right ventricular filling during inspiration increased the right ventricular stroke volume and the systolic pulmonary arterial pressure. On the other hand, the increased intrapericardial pressure induced by inspiration decreased left ventricular filling, stroke volume and systolic systemic arterial pressure, thereby causing pulsus paradoxus. However, when the systemic venous return to the right heart was kept constant, no respiratory variations were observed in the intrapericardial pressure and systemic arterial pressure, hence failing to induce pulsus paradoxus. Furthermore, Shabetai *et al.* found that in apneic dogs with cardiac tamponade a sudden increase in systemic venous return to the right heart resulted in an increased intrapericardial pressure and in a decreased systemic arterial pressure. These experimental data reported by Shabetai *et al.* are sufficient to prove the validity of the original hypothesis postulated by Dornhorst *et al.* Presently, the authors also feel that the above mentioned hemodynamic events demonstrated by Shabetai *et al*, is most likely the best evidence for the hemodynamic mechanism of pulsus paradoxus in patients with cardiac tamponade. □

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Books As Clinical Tools

REFERENCES ON CLINICAL MICROBIOLOGY

LAWRENCE A. CHITWOOD, Ph.D.

The complexities of microbiological testing within recent years have created a hiatus between practicality and the desire to achieve sophistication in the laboratory aspects of infectious diseases. Due to the channelling of funds into research-oriented projects, the current literature is filled with an array of new, novel, and unique microbiological techniques. Whereas in the past, supplies and reagents to perform many diagnostic microbiological procedures were not readily available, today many commercial firms can supply tailor-made reagents shortly after the technique is in print. Therefore, one must not only evaluate the feasibility of instituting diagnostic procedures which have stood the "test of time" but also ascertain the desirability of instituting some of the newer techniques. Clinical microbiology encompasses a myriad of biological disciplines including bacteriology, serology, immunology, mycology and virology. Inasmuch as the techniques utilized in clinical microbiology are essentially tailor-made to diagnostic problems, it is necessary for the practicing physician to evaluate carefully the capabilities and limitation of the individual circumstances. The depth of microbiological examination can and does vary from a simple Gram stain of a clinical specimen to highly specialized tests available only at the National Communicable Disease Center.

As noted in Anderson's[1] book the details of management were of secondary importance when specific therapy was not available and recovery depended primarily on the patient's innate resistance, but today survival, extent and duration of illness frequently is predicat-

From the Department of Pediatrics and The Infectious Disease Laboratories, Children's Memorial Hospital, University of Oklahoma Medical Center, Oklahoma City, Oklahoma. One of a series sponsored by the Department of Continuing Education, University of Oklahoma Medical Center.

ed upon an accurate diagnosis, identification of the offending organisms, and an informed choice and correct use of appropriate antibiotics.

A number of excellent academically oriented books[2, 3, 4] are available which provide broad based microbiological information. In addition to providing an excellent source for more obscure references, the companion volumes of Topley and Wilson[5] are available for those desiring more detailed and extensive information. Topics of current interest in general microbiology are available in annuals such as the *Annual Review of Microbiology* and for the more specialized interests in *Annual Review of Pharmacology, Annual Review of Biochemistry, Advances in Virus Research*, and *Progress in Medical Virology*.

For the uninitiated, Bray's *Clinical Laboratory Methods*[6] provides in a "nut-shell" information relating to the laboratory aspects of bacteriology, serology and mycology. More detailed information can be gleaned from the applied books of Bailey and Scott[7] or Harris and Coleman[8]. A number of texts in mycology are currently available covering the symptomatology, pathology, serology, differential diagnosis, prognosis, treatment and examination of cultures, but an individual preference is given to the book of Conant and Smith[9], now out of print but currently in press. Inasmuch as the laboratory identification of mycotic isolates is based almost entirely on morphological characteristics, accurate identification essentially is prefaced by experience. For those desiring to identify fruiting bodies, spores, and the like, the CDC Manual[10] can be recommended.

Basic concepts of viruses, viral pathogenesis at the cellular level and molecular levels, and the physical and chemical properties of viruses are throughly covered in Prier's text[11]. Additional emphasis on the clinical aspects of viral diseases can be obtained from the text of Rhodes and Van Rooyen[12] or Horsfall and Tamm[13]. Although the laboratory aspects of viral and rickettsial diseases essentially remain in the field of research, the applied book of Lennette and Schmidt[14], provides sufficiently detailed information for performing and interpreting the diagnostic laboratory procedures. □

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DON'T FORGET . . . "POLITICAL ACTION '68" . . . OMPAC'S

CITIZENSHIP CONFERENCE . . . OCTOBER 21st-22nd . . .

SKIRVIN HOTEL, OKLAHOMA CITY

OMPAC Citizenship Conference October 21st-22nd

"Political Action '68" will be the theme of the Oklahoma Medical Political Action Committee's Citizenship Conference, October 21st-22nd in the Skirvin Tower Hotel in Oklahoma City. The two-day meeting is expected to draw several hundred doctors and their wives from throughout the state of Oklahoma.

The conference is designed to inform state physicians on the background, legal base and philosophy behind non-partisan collective political activity, such as OMPAC. In addition, political professionals will discuss the need for organizations and activity of this type in achieving representative government.

State OMPAC chairman, Rex Kenyon, M.D., said, "The conference marks the culmination of a successful membership building program and the beginning of an effective political action plan for 1968 elections. Our political action organization has grown to nearly 700 state physicians and their wives. This gives us the money and the organization to have a telling effect on the next elections."

OMPAC's plans for involvement in the '68 elections will be revealed at the meeting. Kenyon stated, "It is our hope to concentrate our money and manpower on significant contests where the issues are most distinct and the chances of victory are most probable."

Two nationally prominent congressmen, Representative Page Belcher, Republican of Oklahoma, Representative Omar Burleson, Democrat of the 17th District, Texas, will spearhead the program. Both men will speak at the Saturday afternoon session, on the 14th floor of the hotel.

Congressman Burleson will speak on the subject "Physicians in Politics" and will be followed by Belcher's talk "Working With A Candidate."

The program will also include talks by local political leaders including the state chairmen of both major political parties. E. L. Bud Stewart, State Republican Chairman, will speak on "Working with the Party—Republican" and William G. Kerr, State Democratic Chairman, will speak on "Working with the Party—Democrat."

Other political speakers will include the Honorable Clem McSpadden, President Pro Tempore of the Oklahoma State Senate. McSpadden's talk, "Politics Begins at Home" will emphasize the importance of involvement in local and state races.

The noted political historian, OU Professor Arrell M. Gibson, Ph.D., will speak at the Saturday luncheon on the subject, "The History of Party Politics in Oklahoma."

The Saturday session will close out with a "cocktail caucus" to give the conference participants an opportunity to talk directly with the persons appearing on the day's program.

The Sunday morning session will be kicked off with a presentation entitled "There's More than Apples in Oregon—or—The Other OMPAC." Representatives from the Oregon PAC will discuss proven techniques for success. They will be followed by the President of the Tennessee Medical Association, Kenneth M. Kressenburg, M.D., Pulaski, Tennessee, speaking on the topic "Medical-Political Liaison: A Practical Partnership."

The conference will wind up with an outline "OMPAC's Prospective for '68" by Doctor Rex Kenyon. This will be a discussion of the plans and projects OMPAC will sponsor during 1968. □

Health Forum Planned For Northeastern Oklahoma Counties

A positive picture of the health resources of 17 counties in northeast Oklahoma will be presented to several hundred area business and civic leaders at Western Hills Lodge on October 26th when the Oklahoma State Medical Association and other health organizations present the "Oklahoma Northeast Health Forum."

Under the leadership of OSMA Trustee H. E. Denyer, M.D., Bartlesville, a committee of physicians were instrumental in developing the program in response to the request of an area development group. The group, named "Oklahoma Northeast," is primarily concerned with attracting industry to the area, and it requested state health organizations to present a positive inventory of health personnel and facilities as a factor of interest to potential industries. It is expected that proceedings of the forum will be published for nationwide distribution.

The theme for the meeting is "Health Services in Northeast Oklahoma . . . Inventory and Initiative for Planning."

Topics Selected

Topics include: "Factors Affecting the Industrial Development Potential of the Area"; "An Inventory of Health Facilities and Plans for Expansion"; "Public and Indian Health Services"; "Medical, Dental, and Hospital Service for Your Community"; "Planning for the Future"; and "Practical Suggestions for Local Initiative."

Speakers Named

Appearing on the program will be: H. E. Denyer, M.D. Bartlesville, John E. Highland, M.D., Miami, Donald H. Olson, M.D., Vinita, B. C. Chatham, M.D., Chickasha, John W. Shackelford, M.D., Oklahoma City, James L. Dennis, M.D., Oklahoma City, Tom C. Points, M. D., Oklahoma City, A. B. Colyar, M.D., Oklahoma City, Jack C. Robertson, M.D., Oklahoma City and Don Blair, OSMA Executive Secretary.

Other speakers include representatives from the Oklahoma Hospital Association, Oklahoma State Dental Association, State Department of Health, OU Medical Center and the Oklahoma Council for Health Careers.

The program will begin with a Dutch Treat Luncheon at noon in Western Hills Lodge, Wagoner, and is expected to adjourn at 4:30 p.m.

All medical doctors from the following counties are invited: Nowata, Muskogee, Osage, Rogers, Okmulgee, Tulsa, Craig, Ottawa, Mayes, Wagoner, Haskell, Cherokee, McIntosh, Adair, Washington, Delaware, and Sequoyah. □

Oklahoma Physicians Assist in Viet Nam

During the past two years Viet Nam duty has called seven Oklahoma physicians. Six of them volunteered for 60-days duty in that war-torn country during the fiscal year 1965-66 and 1966-67. The seventh, Malcom Phelps, M.D., of El Reno, Oklahoma, went to Viet Nam in July, 1966, as Field Director of all AMA Volunteers for Viet Nam and did not return to the United States until immediately before his election as AMA Vice-President by the AMA's House of Delegates during the 116th annual convention of the organization in June, 1967.

While serving with the volunteer physicians for Viet Nam program, the six Oklahoma physicians worked in provincial civilian hospitals throughout the country. The volunteers receive only transportation and an expense allowance of $10 a day, otherwise their services are entirely voluntary.

At the request of President Johnson, the volunteer physician program was initiated in August, 1965 under the direction of the People-to-People Health Foundation. In June, 1966, the contract was transferred to the American Medical Association which had assisted in the recruitment of physicians for the project throughout its first year of operation.

Over 300 physicians have participated in the program since its inception. Approximately one out of every 1,000 licensed physicians in the United States have voluntarily provided, under this program alone, over 50 man-years of medical care to the civilian population of South Viet Nam.

The Oklahoma volunteers consisted of: Richard A. Conley, M.D., Watonga; Richard F. Harper, M.D., Pawhuska; J. Ted Herbelin, M.D., Oklahoma City; Gale R. Kimball, Oklahoma City; Wayne B. Lockwood, M.D., Oklahoma City; and Jack D. Welsh, M.D., Oklahoma City.

On a percentage basis Oklahoma's seven volunteers compare favorably with some of the largest medical associations in the United States. With the national average being approximately one out of one thousand licensed physicians, Oklahoma's average is three out of one thousand licensed physicians in the state.

In a recent letter to President Maxwell A. Johnson, M.D., of the Oklahoma State Medical Association, Milford O. Rouse, M.D., AMA President, said, "This program is one of the most successful elements of the US civilian assistance programs. This medical assistance program has done much to improve the image of American medicine and the American physician."

In his letter, Doctor Rouse went on to say there is a particular need for general practitioners, internists, pediatricians, general surgeons, orthopaedic surgeons, and ophthalmologists in Viet Nam at this time.

Oklahoma physicians interested in volunteering for the program should contact Doctor Charles H. Moseley, M.D., Project Director, Volunteer Physicians for Viet Nam, 535 N. Dearborn Street, Chicago, Illinois 60610. □



OSMA Honors Three Tulsa Physicians

Two veteran Tulsa physicians are shown as they receive gold pins from the Oklahoma State Medical Association in recognition of the completion of fifty years in the active practice of medicine.

They are: (second from left) M. V. Stanley, M.D., a 1917 graduate of Chicago College of Medicine and Surgery, and (third from left) George H. Miller, M.D., a 1917 graduate of St. Louis University School of Medicine. Both are still in active practice.

Thomas H. Davis, M.D. (right), retired industrial surgeon, received a Certificate of Life Membership in the Oklahoma State Medical Association. A 1924 graduate of the University of Cincinnati School of Medicine, he retired last year from the staff of Glass-Nelson Clinic of Tulsa.

Making the presentations at the September 18th meeting of the Tulsa County Medical Society is Maxwell A. Johnson, M.D., of Tulsa (left), President of the Oklahoma State Medical Association. □



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Editor Named to National Advisory Committee

C. B. Dawson, M.D., editor-in-chief of The Journal of the Oklahoma State Medical Association, has been elected to membership on the Advisory Committee to the Board of Directors of the State Medical Journal Advertising Bureau, Inc., a national bureau which handles advertising for the OSMA Journal and 33 other state journals. This honor came during the SMJAB Biennial Journal Conference held in Chicago, September 18th-19th, 1967.

Doctor Dawson joined the Editorial Board of The Journal in August, 1961, filling the unexpired term of the late Don Branham, M.D. In June, 1962, he assumed the duties of editor-in-chief following the resignation of Ben H. Nicholson, M.D.

His term in the advisory capacity will be for five years. The committee meets in conjunction with the Board of Directors at their regular meetings. □

Expanded Postgraduate Program Offered At AMA Convention

Physicians will have an opportunity to continue their postgraduate medical education at courses offered during the American Medical Association's Clinical Convention in Houston, November 26th-29th.

The postgraduate program, expanded to four subjects this year, offers courses in "Fluid and Electrolyte Balance," "Oncology," "Cardiovascular Disease," and "Obstetrics and Gynecology."

Leading medical educators will lecture at the courses, which will consist of three half-day sessions each.

The courses will be limited to 200 persons each; the first 200 who register on arrival in Houston will be given tickets. There will be a special Postgraduate Course registration booth adjacent to the general registration area in Astro Hall.

Courses will begin promptly at 9:00 a.m. and 2:00 p.m. □

Highlights of OSMA Annual Meeting Outlined



The Oklahoma State Medical Association's 1968 Annual Meeting is already out of the planning stage. The three-day meeting will be held in the Skirvin Hotel, Oklahoma City, May 16th, 17th, and 18th of next year.

The annual meeting planning committee has announced that eleven specialty scientific sessions will be included next year. These are cardiovascular disease, EENT, general practice, internal medicine, OB-GYN, orthopedics, pediatrics, psychiatry, radiology, surgery, and urology.

Several of the specialty groups have already arranged for their scientific speakers and have their scientific section programs complete. Each of the specialties has a program committee assigned to this task.

The business portion of the annual meeting will include a meeting of the OSMA Board of Trustees Thursday afternoon, May 16th, and a meeting of the full House of Delegates, Friday and Saturday morning, May 17th and 18th. The social portion of the annual meeting will include a Champagne Party, Thursday evening, in the Persian Room of the Skirvin Tower Hotel. The annual President's Inaugural Dinner-Dance will feature a gourmet dinner with wine, Saturday evening, May 18th. This will be preceded by a poolside cocktail party in the Skirvin's Sun Suite Club.

The success of this year's Gaslight Party in Tulsa encouraged the planning committee to include a Gaslight Party in the 1968 Annual Meeting. The Friday night affair will feature entertainment from the famous Gaslight Club in Chicago.

Four beautiful flappers and five great jazz musicians will fly to Oklahoma City from the Gaslight Club in Chicago to appear at the Friday evening party. The girls will sing and dance to the nostalgic fire and flash of the roaring 20's Dixieland music. Some of the outstanding moments of the party will occur when members of the audience are brought to the stage and taught by the girls how to do the Charleston and Twist in the true gaslight fashion.

During the evening two lifetime memberships in the international Gaslight Clubs will be given away to lucky physicians.

Doctor Richard B. Price, Chairman of the Annual Meeting Committee, said, "The 1968 OSMA Annual Meeting should be the biggest and best. We have had excellent cooperation from all the specialty societies in preparing the scientific portion of the program. Requests for exhibit space are flowing into the OSMA Office." □

Community Health Week Proclaimed

The Oklahoma State Medical Association is observing the week of October 15th as Community Health Week—1967. This special week was officially proclaimed by Governor Dewey Bartlett in response to a request from the Public Relations Committee of the OSMA.

This is the fifth year for a national observance of this special week. It is being sponsored nationally by the American Medical Association and locally by the OSMA and its member-county societies. Its observance throughout the state gives the medical association an opportunity for an extra public relations effort. At the urging of Doctor James B. Eskridge, III, M.D., Chairman of the OSMA Public Relations Committee, several county societies are participating in the observance of the week. Their projects include open houses at the local hospital, appearances on television and radio stations, talks before local civic groups, talks before high school groups and interviews with local newspapermen.

Nationally, the special week has three basic themes. They are: Health Education on Venereal Disease, Health Education on Immunization and Career Opportunities in Medicine and Allied Fields. The OSMA's public relations committee chose the career opportunities as its statewide theme.

The state association's promotion of this special week includes information kits to all state newspapers stressing the importance of health careers. The kit contains feature articles, suggested editorials, and a health quiz to be used during the special week of October 15th. The observance of the week was announced statewide in early October with a photograph of the preclamation presentation and a news story about the governor's action.

All Oklahoma radio and television stations received packets of spot announcements stressing health careers for use during the Community Health Week. The television stations also received slides to use on the viedo portion of the announcement. The three Oklahoma City commercial television stations, WKY-TV, KWTV-TV, and KOCO-TV, prepared and used special color slides with their announcements during the week. In addition, the three stations invited several Oklahoma physicians to appear on their discussion-type programs during the week.



Governor Dewey Barlett proclaims the week of October 15th to be "Oklahoma Community Health Week—1967" as he presents Maxwell A. Johnson, M.D., OSMA President, and Scott Hendren, M.D., OSMA President-Elect, with the official proclamation.

The Oklahoma County Medical Society arranged for billboard space throughout Oklahoma City to feature health career information. They supplemented this with a poster campaign featuring special Community Health Week-1967 posters of their own design. These posters were placed in doctors' offices, hospital waiting rooms and prescription counters throughout the city.

A suggested editorial was prepared for use by Oklahoma State high school newspapers pointing out the increasing need for young people to enter the health service field.

Doctor James B. Eskridge, III, coordinated both the Oklahoma State Medical Association and the Oklahoma County Medical Society's public relations effort during Community Health Week. Doctor Eskridge is chairman of both organizations' public relations committees.

In a special feature article sent to all state newspapers, Doctor Maxwell A. Johnson, president of the Oklahoma State Medical Association, pointed out that 1,000,000 people are needed today in the rapidly growing health careers field. He said, "There are at least 200 health career pursuits offering conscientious individuals a lifetime of challenge and personal satisfaction . . . "

Governor Bartlett's official proclamation of Community Health Week said:

"WHEREAS, good health is the most priceless possession of every man, woman and child in our state, and:

"WHEREAS, good health is one of the state's most valuable resources and one vital to the safety, growth, productivity and progress of our state; and maintaining or improving public health is a constant goal of the state, and:

"WHEREAS, the many members of the community health team, by working together and with continued public support, have made immense strides in protecting and improving public health and assuring that health care services are available to all,

"WHEREAS, emphasis on health care services is so predominant today that the 'health services industry' is well on its way toward becoming

the nation's largest single civilian employment field, and:

"WHEREAS, one of every ten high school graduates must be attracted every year into medicine and its allied fields to meet growing demands in providing medical care services, and:

"WHEREAS, we must strive to encourage each of our communities to have the vision to coordinate and plan for tomorrow's health needs,

"NOW, THEREFORE, I, Dewey F. Bartlett, Governor of the State of Oklahoma, do hereby proclaim the week of October 15 as COMMUNITY HEALTH WEEK throughout the state and call upon the Oklahoma State Medical Association, county medical societies, state and county health departments, allied health professions, public and private health organizations and agencies, civic organizations and public schools to join in its observance to demonstrate to the citizens of Oklahoma how they are teaming up for better health and to increase public awareness of the many health facilities and services available at the community level to enrich the lives of all of us." □

OU Postgraduate Course November 8th

A postgraduate short course on "The Voice and Its Disorders" will be presented by six faculty members Wednesday afternoon, November 8th at the University of Oklahoma Medical Center.

Discussion topics are phylogenesis and physiology of the larynx, clinical evaluation of hoarseness, voice misuse and abuse, management of laryngeal trauma, and the evaluation and management of stridor in infants and children.

The faculty is composed of James B. Snow Jr., M.D., professor and head of the Department of Otorhinolaryngology; Berkley S. Eichel, M.D., assistant professor, Donald R. Resler, M.D., Rollie E. Rhodes, M.D., and W. David Stuart, M.D., clinical instructors, all of the Department of Otorhinolaryngology; and Bruce R. Pierce, Ph.D., associate professor of communication disorders. □



Alumni Association Elects New Officers

The officers and executive committee of the OU Medical Alumni Association that will govern its affairs during the year October 1st, 1967 through September 30th, 1968 are (right to left): President George T. Ross, M.D., Enid; President-elect Ed L. Calhoon, M.D., Beaver; Treasurer James W. Wilson, M.D., Oklahoma City; and Secretary Adolph N. Vammen, M.D., Tulsa. They were elected October 1st at the association's annual membership meeting in Oklahoma City. □



OSMA Life Membership Awarded

Two new life members were added to the Oklahoma State Medical Association roles recently. Here Wayman J. Thompson, M.D., and Ruth S. Reichmann, M.D., receive their Life Membership Certificates from R. Q. Goodwin, M.D., a past-president of the OSMA.

Doctor Thompson was a 1929 graduate of the University of Oklahoma School of Medicine and Doctor Reichmann was a 1924 graduate of the University of Michigan School of Medicine. □

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Oklahoma Delegation To Attend Conference On Medical Care

Medical delegates from 14 western states will gather in Chandler, Arizona, November 10th-12th to attend a special conference on " . . . Future Directions and Decisions in Medical Care." The meeting is being jointly sponsored by the California Medical Association and the U.S. Public Health Service.

The three-day gathering will address itself to a variety of problems and issues of immediate and long-range interest to the medical profession and to the public. Emphasis will be placed on discussions of Public Law 89-749, known as "Comprehensive Health Planning."

The 14 states will be represented by 300 delegates. Oklahoma will have 20 men in attendance at the meeting. Three OSMA members—Doctors Rex Kenyon, James L. Dennis and Thomas C. Points—will participate in the program.

Scott Hendren, M.D., President-Elect of OSMA, said, "Organized medicine is very skeptical about the ever-increasing number of government programs which are bringing about drastic changes in medical practice. The fact that Oklahoma is sending a large delegation to this meeting does not imply any endorsement of the program topics. Rather, it demonstrates our deep concern for the future of medicine and emphasizes our determination to control our own destiny."

The meeting will convene Friday afternoon, November 10th, with a statement of the goals and objectives of the conference and a talk outlining the many facets of P.L. 89-749.

Immediately after dinner a panel discussion will be held on the "Goals and Objectives of the Medical Profession." Rex Kenyon, M.D., Past-President of OSMA and current Chairman of the OSMA Governmental Relations Committee, will moderate the discussion. It will center on the attainability and avenues of approach for medicine's future goals.

This will be followed by a second panel discussing the "Components of Comprehensive Health Planning and the Coordination of Service and Facilities." Specific areas of involvement will be taken up in this portion of the program. The discussion will cover such topics as areawide planning; personal and environmental health; mental health; medical manpower; heart, cancer and stroke projects; the Office of Economic Opportunity; and how to achieve coordination and integration of all such programs.

James L. Dennis, M.D., will represent the OSMA on this panel. Doctor Dennis is Dean and Director of the O.U. Medical Center and is working closely with the Regional Medical Program, "Project Responsibility," and the Health Intelligence Facility.

A third panel discussion will be held Saturday morning on the topic "Relationship of Federal, State and Local Governments to P.L. 89-749."

The last panel will cover the topic, "Analysis and Evaluation of Planning Processes, Based Upon Previous Experiences and Expectations of P.L. 89-749." This group will concern itself with utilization and review, the OEO, inventorying and appraising community efforts, manpower shortages and elimination of overlapping health services. Oklahoma's Doctor Tomas C. Points will be on this panel. He is project director of both Project Responsibility and the Health Intelligence Facility at the OU Medical Center.

Doctors Points and Dennis will also act as chairmen of two special workshops that will draw-up specific recommendations and goals to help guide the various state medical associations in future years.

The Saturday evening dinner will feature a talk by Milford O. Rouse, M.D., President of the AMA. This will be followed by informal discussions among the delegates.

Sunday morning, November 12th, the delegates will convene in general session to hear the reports of the four panel workshops and a summation of the conference.

A recent publication by the conference planners outlined the goals, objectives and purposes of the meeting. The goals include: Focusing " . . . on the need for physicians and medical society immersion and involvement in the total health planning and decision-making process; to encourage continuing self-evaluations and re-evaluation of professional and community efforts in assessing outcomes of activities undertaken in charting new goals; and to stimulate participants to impart to physicians in their communities the information derived from the conference . . . " □

Fee Review Mechanism Explained

The association's governmental relations committee reminds all OSMA members of their right to request a review of fees questioned by either the Medicare carrier (Aetna) or by the Department of Public Welfare in the administration of its program for medical indigents.

An "OSMA Medical Insurance Review Function" program was developed and implemented on July 1st, 1966 for the purpose of "seeking the objective reconciliation of unusual medical insurance claims involving members of the OSMA and health insurance coverages which offer payment of customary and reasonable fees."

Approval of the review program was granted by both Aetna and the Department of Public Welfare at the time that Medicare began operation and the Department of Public Welfare launched its expanded Title XIX program and converted its payment system to the customary and reasonable fee concept.

Subsequently, the state association created a representative statewide medical insurance review committee and thirty county medical societies responded by appointing committees of their own to assume original jurisdiction.

The review of a claim may be initiated by the physician, the insurance carrier, or by the patient.

The OSMA committee serves primarily in an appellate capacity, but may assume original jurisdiction upon authorization of the involved county medical society.

Continued on page 580

DEATHS

PLEASANT P. NESBITT, M.D.

1877-1967

A past-president of the Oklahoma State Medical Association, Pleasant P. Nesbitt, M.D., died September 10th, 1967, in Tulsa. A native of Polo, Missouri, the 90-year-old surgeon graduated from Northwestern University School of Medicine in 1903. He practiced in Muskogee, Oklahoma prior to moving to Tulsa where he retired in 1950.

Doctor Nesbitt has been active in all aspects of organized medicine having served as a councilor of the OSMA from 1911-17, associate editor of *The Journal* of the OSMA from 1922-36, speaker of the OSMA House of Delegates in 1941-42 and president of the association in 1925-26.

His dedicated service to the profession was recognized by the OSMA when he received an Honorary Membership in the association in 1950 and again when he was presented a Fifty-Year Pin in 1960.

E. EVANS CHAMBERS, M.D.

1912-1967

An Enid surgeon, E. Evans Chambers, M.D., died September 16th, 1967, in the Bronx, New York. A native of Memphis, Tennessee, Doctor Chambers graduated from the University of Oklahoma School of Medicine in 1940. Following postgraduate training in Pennsylvania and Ohio, he established his practice in Enid.

In addition to his practice of medicine, Doctor Chambers served as secretary of the Oklahoma Wildlife Conservation Commission. □

Continued from page 579

The purpose of the review system, in most cases, is to fix the liability of the governmental insurance carrier toward the cost of a medical service. The program is not designed to fix medical fees throughout the state of Oklahoma. To the contrary, it provides a mechanism where the merits of an individual case under question may be judged by a local review committee comprised of physicians and an equitable settlement reached.

This is particularly true when the physician deals directly with the patient in the billing procedure; the amount agreed upon by the review committee only fixes the liability of the health insurance carrier and does not control the amount agreed upon privately between the patient and the physician. In cases where the physician accepts an assignment, however, the amount agreed upon by the review committee establishes the government's liability to the physician and a physician may only collect directly from the patient (or from DPW in the case of an indigent) an amount equal to the applicable co-insurance and unpaid deductible.

To utilize the medical insurance review system, the carrier must meet the following conditions:

- The coverage involved must provide payment of customary and reasonable fees.
- All other appropriate avenues of settlement must have been attempted by the carrier directly with the physician.
- The physician should be advised by the carrier that the unusual nature of the claim requires its submittance for review.
- A "medical review summary form" must be completed by the carrier in sufficient copies to provide one to each review committee member.

Having received a properly constituted and documented case for review, the committee should attempt to act within 14 days. The committee has the option of either finding in favor or against the physician's billed charges, and in the latter instance is obligated to recommend a reasonable fee to establish the insurance carrier's liability.

Appeals from the decision of a committee having primary jurisdiction may be made to the OSMA. □

BOOK REVIEWS

NEW DRUGS, 1967 EDITION. American Medical Association, Council on Drugs, 535 North Dearborn Street, Chicago 60610, 1966, 592 pp. $3.50.

The 1967 edition of New Drugs, which is a publication of the Council on Drugs of the American Medical Association, is a well-bound paperback containing data on 1,290 single entity drugs which have been marketed within the past ten years in the United States. It is made up of fifty chapters dealing with general classes of therapeutic agents. Each chapter begins with a general discussion of a class of drugs such as antibacterial agents, anticonvulsants, etc. This is followed by a concise review offering pertinent information on pharmacology, actions and uses, adverse reactions, precautions, dosage and available preparations.

The book is prepared by the AMA Council on Drugs and its consultants. It is objective, relatively brief, but well-organized, and is quite current. The index lists drugs by generic names. Trade names are given in the adjacent sections. The appendix also provides a supplementary list of Canadian drug names.

At its price, this book is a bargain, and can be recommended to physicians, students and house officers. —*Harris D. Riley, Jr., M.D.*

DISORDERS OF THE RESPIRATORY TRACT IN CHILDREN. Edited by Edwin L. Kendig, Jr., M.D., Philadelphia and London: W. B. Saunders Company, 1967, 834 pp. $26.00.

As stated in the editor's preface, the purpose of this volume is to supply the first comprehensive and authoritative textbook on respiratory tract disorders in infants and children. "During the past two decades there have been striking advances in the diagnosis and treatment of such problems in children but there has heretofore been no textbook on the subject which might be considered comprehensive and authoritative. We have attempted to meet this need." It is further stated, "the

present volume representing the collaborative efforts of a number of experienced authorities was designed and developed to design an answer to almost any question about respiratory tract diseases in children raised by the practitioner, resident or intern in pediatrics, the chest physician, the roentgenologist, or by the medical student or general practitioner." Indeed, many of the questions are presented, discussed and answered. Non-pediatricians will be surprised by the extent and wide ramifications of respiratory tract disorders in infants and children. In scope the book ranges from fundamentals in respiratory physiology to the management of such esoteric diseases as pertussoid eosinophilic pneumonia, from respiratory disorders of the neonate to the consequences of pulmonary trauma, and from infections to tumors.

The first two sections deal with the functional basis of respiratory pathology, the history and physical examination, diagnostic and therapeutic factors, and the influence of age in respiratory tract disease. This is followed by a comprehensive discussion of respiratory disorders in the newborn. Following this there are chapters on etiology and exhaustive general-organ recitals including two major sections on infections of the upper and lower respiratory tract, respectively. In the section entitled Non-Infectious Disorders of the Lower Respiratory Tract, there is a comprehensive discussion of such unusual disorders as the Hamman-Rich Syndrome, pulmonary alveolar proteinosis, and pulmonary hemosiderosis, as well as the more common problems such as atelectasis, aspiration pneumonia, and bronchial asthma. A lengthy chapter, Other Diseases With a Prominent Respiratory Component, covers a wide variety of disorders ranging from congenital malformations of the lower respiratory tract through cystic fibrosis, the mycoses, tuberculosis, and anonymous mycobacterial infections to pneumonia in measles and in the collagen diseases. The final section is concerned with respiratory disorders due to trauma.

The reproduction of photographs and other illustrations is generally of a high quality.

Probably the most important advantage of the volume is its presentation of material beyond the scope of general pediatric textbooks. For example, almost a hundred pages are devoted to describing various pneumonias in infancy and childhood.

Perhaps the chief criticism of this work is the organization and, in places, duplication. The 29 contributors have produced a total of 67 chapters divided into 11 sections. This has resulted in significant repetition in certain areas without offering different opinions on the same subject. Despite the attempt to provide comprehensive coverage, certain recently described respiratory disorders such as the Wilson-Mikity syndrome are not mentioned. The volume is also expensive.

Because respiratory disorders are areas of constant concern in pediatric practice, the pediatrician and other physicians who care for children, the house officer or student will find this work of great value. The shortcomings are overshadowed by the comprehensive scope and this book is to be recommended.—*Harris D. Riley, Jr., M.D.* □

Miscellaneous Advertisements

PHYSICIANS NEEDED in Enid, Oklahoma. Due to accidental death of partner, Enid Clinic needs a general surgeon immediately. Office space available in relatively new clinic building adjacent to Enid General Hospital. Opportunity to become stockholder in clinic. Also needed: General practitioner, ophthalmologist, ENT, obstetrician-gynecologist, urologist. Excellent city for practice, professional associations, and living. Contact C. J. Roberts, M.D., c/o Enid Clinic, 617 South Quincy, Enid, Oklahoma 73701.

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FOR SUBLEASE part or all, 4,000 square feet, well planned office space on well traveled street. One block from shopping area. Good pay neighborhood. Three doctors and one dentist in well established practice there for past ten years. Contact Paul D. Erwin, M.D., 2209 North Portland, Oklahoma City. WI 6-4444.

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WANTED: General practitioner in small community with modern medical facilities. This is a good type practice. Beginning salary between $20,000 to $25,000 depending upon qualifications; additional salary available for special qualifications. Contact Loyd G. Williams, M.D., Wetumka, Oklahoma.

IMMEDIATE OPENING for licensed G.P. or Internist. Medical Director for Clinical Pharmacology Unit and institutional health service located at McAlester, Oklahoma. Must be able to undertake overall administration of medical department including a small physician staff. Opportunity for medical school staff appointment. Vacation, sick leave and other fringe benefits. Begin $24,800. Contact John P. Colmore, M.D., University of Oklahoma Medical Center, 800 N.E. 13th Street, Oklahoma City. 405 CE 5-9421, extension 351. □

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TO:

ATTENDING PHYSICIAN'S REPORT

1. PATIENT'S NAME | 2. ADDRESS

4 DIAGNDSIS (EXPLAIN CDMPLICATIDNS)

5 ADDITIDNAL DIAGNOSES (CHRDNIC DISEASE OF DEFECT FOUND DURING PRE

6 DATE DF ONSET | 7 DATE FIRST CONSULTED | 8 DUE TD PREGNANCY ☐ YES ☐

11. SURGICAL OR OBSTETRICAL PROCEDURES (DESCRIBE)

12. IF HDSPITALIZED. NAME AND ADDRESS OF

15 NAME AND ADDRESS OF OTHER P

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FROM

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APPROVED BY THE OKLAHOMA STATE MEDICAL ASSOCIATION

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COMPLETE FOR MEDICAL CARE ONLY: AT HOSPITAL, HOME, OR OFFICE
GIVE THE DATES OF TREATMENT BY INSERTING MONTH AND YEAR. INDICATE EACH
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Dosage: Adults—1 tablet, swallowed whole to preserve timed-release feature, in morning, midafternoon and at bedtime. Side effects: Occasional drowsiness, blurred vision, cardiac palpitations, flushing, dizziness, nervousness or gastrointestinal upsets. Precautions: The patient should be advised not to drive a car or operate dangerous machinery if drowsiness occurs. Use with caution in patients with hypertension, heart disease, diabetes or thyrotoxicosis.

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The nystatin can prevent overgrowth of monilia; the phosphate complex delivers tetracycline to the blood rapidly. Side effects are infrequent.

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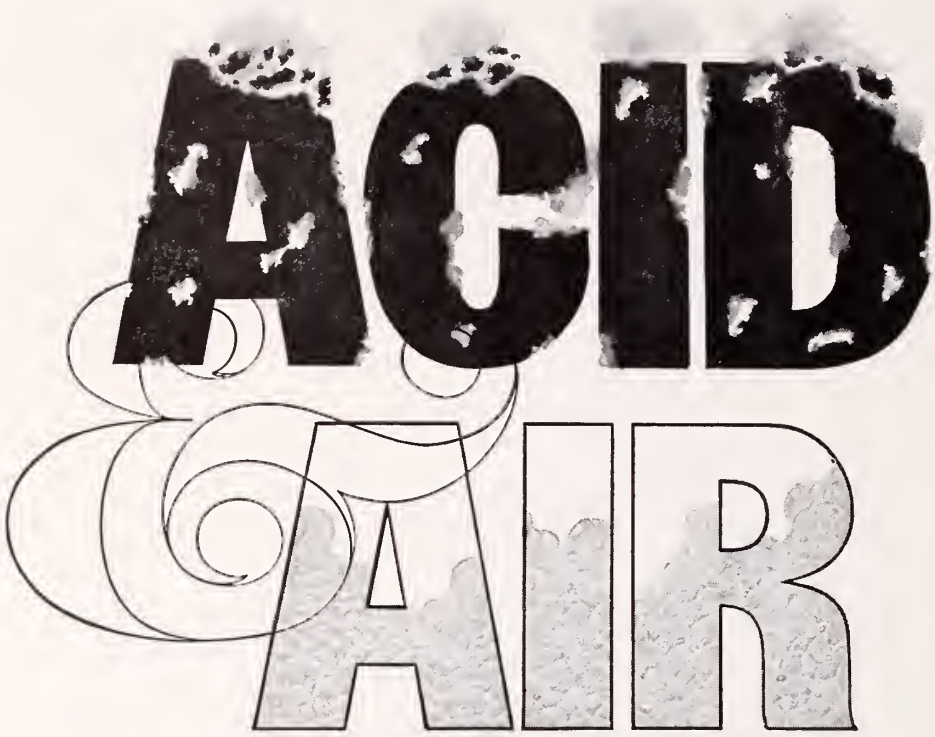
Tetrex-F (tetracycline phosphate complex-nystatin) is especially useful in patients most susceptible to fungal overgrowth during tetracycline therapy: (1) the elderly or debilitated, (2) young children, (3) the diabetic, (4) those on long-term tetracycline therapy, (5) those on steroid therapy, (6) those who have had moniliasis before, and (7) pregnant patients with a history of monilial vaginitis.

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November 7th

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November 14th

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Hardly a staph organism can resist the bactericidal action of Prostaphlin® (sodium oxacillin), as shown by a 34-month *in vitro* study. Of all staph isolates tested, 99.5% were sensitive to oxacillin.[1]

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There is a high correlation between these *in vitro* findings and clinical results. Of 610 patients treated with Prostaphlin (sodium oxacillin), 89.8% were reported cured or improved, including those with staph infections resistant to penicillin G.[2] And since resistance does not appear to develop *in vivo,* therapy with oxacillin can be extended when necessary.

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Besides being staph-specific and rapidly absorbed—Prostaphlin (sodium oxacillin) has established an outstanding record of safety during five years of widespread clinical use. Continuous high blood levels of oxacillin have not produced toxic effects on kidney function, assuring a significant margin of safety. However, as with all penicillins, the possibility of allergic response should be considered.

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Prostaphlin (sodium oxacillin) is available in three flexible dosage forms to suit the age of the patient and severity of infection—an oral solution for pediatric use, capsules, and multi-dose vials for injection.

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References: 1. Abstracted from *Antibiotic Sensitivity of Staphylococci Studied from November 1962 through August 1965,* reported by Griffith, L.J., Staphylococcus Reference Laboratory, V.A. Hospital, Batavia, N.Y. 2. Data on file, Bristol Laboratories.

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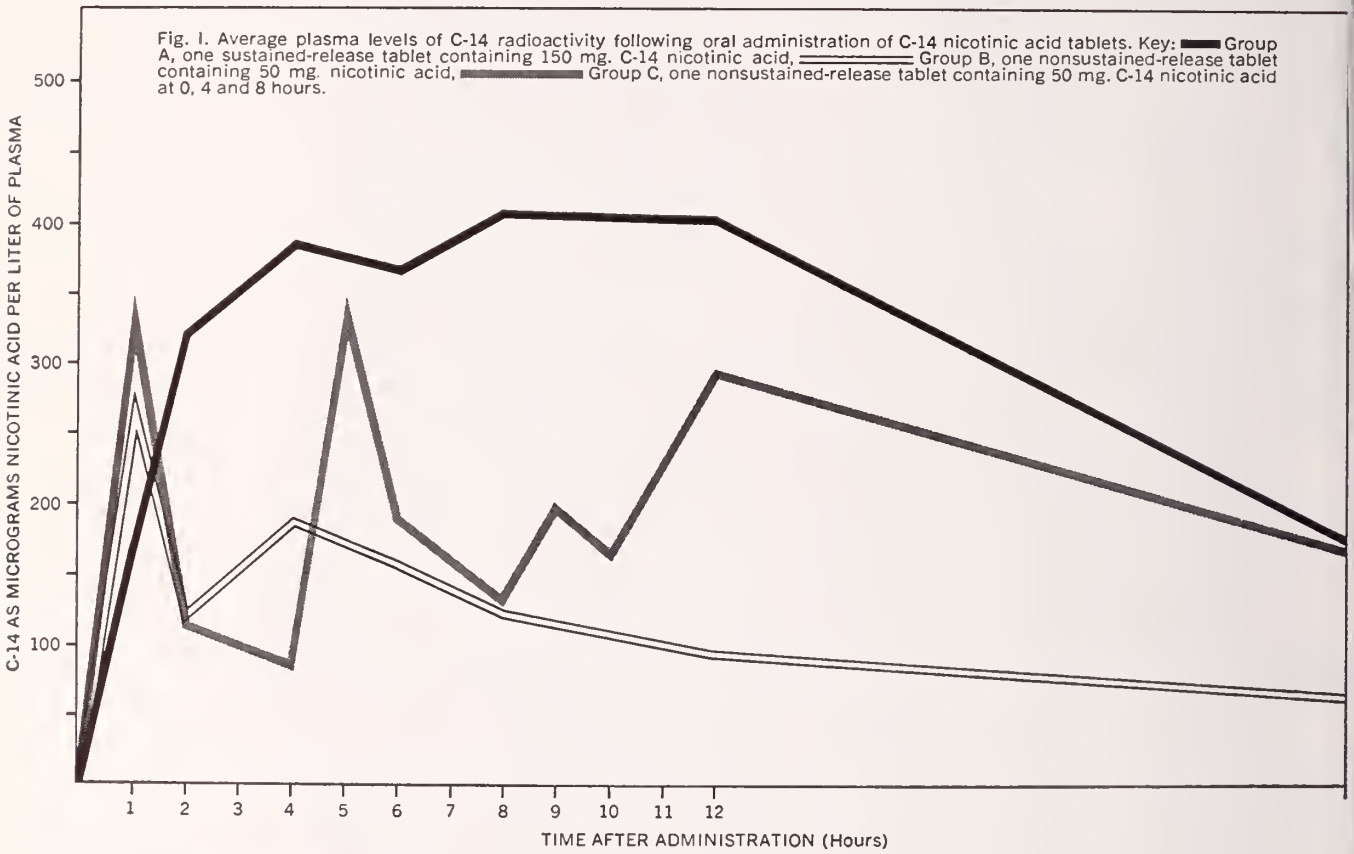
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and cerebral stimulation for th

Fig. I. Average plasma levels of C-14 radioactivity following oral administration of C-14 nicotinic acid tablets. Key: ▬ Group A, one sustained-release tablet containing 150 mg. C-14 nicotinic acid, ═══ Group B, one nonsustained-release tablet containing 50 mg. nicotinic acid, ▬▬ Group C, one nonsustained-release tablet containing 50 mg. C-14 nicotinic acid at 0, 4 and 8 hours.





(fewer absent doses by absent-minded patients)

Human volunteer subjects were administered Geroniazol TT tablets with the nicotinic acid component made radioactive with C-14. Plasma and urine samples were analyzed. (See Figures I and II) The radioactive tracer study substantiated the previous clinical evidence that the release of nicotinic acid from the Geroniazol TT tablet produced a gradual rise in plasma levels to a plateau for a total of 12 hours and more.

Such proven sustained activity makes the management of geriatric patients much easier by minimizing the possibility of neglected doses through absent-mindedness or senile confusion. Therapy *can* be continuous on a daily dose of only one Geroniazol TT tablet every 12 hours.

The gradual release of nicotinic acid in Geroniazol TT will provide the well-known peripheral vasodilatation needed in patients with deficient circulation and with a minimum amount (if any) of "flushing." Also, cerebrovascular circulation is complemented by pentylenetetrazol, long-established as a cerebral and respiratory stimulant.

Geroniazol TT improves the typical, unfortunate, signs of senile confusion. Patients become more alert,

ged and debilitated

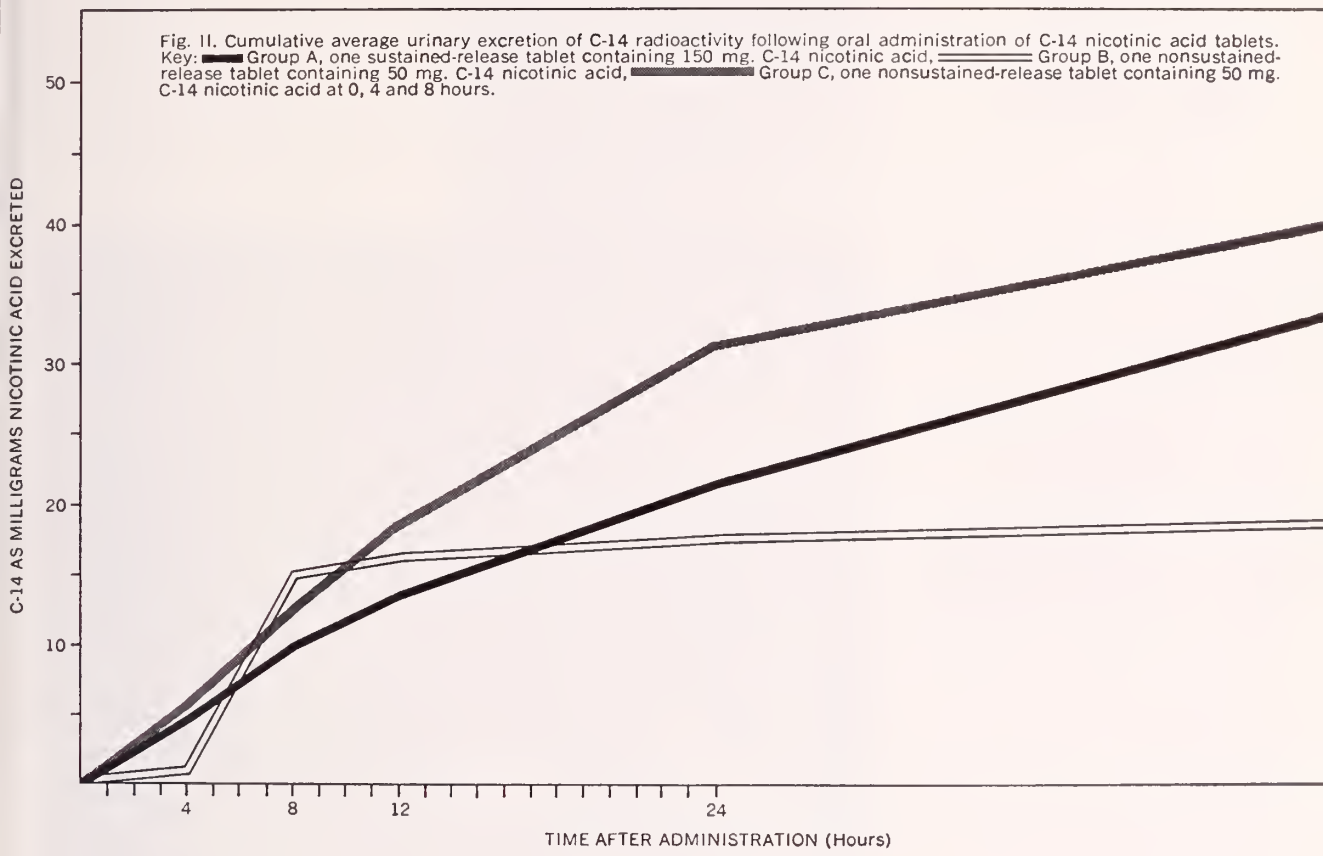


Fig. II. Cumulative average urinary excretion of C-14 radioactivity following oral administration of C-14 nicotinic acid tablets. Key: ▬ Group A, one sustained-release tablet containing 150 mg. C-14 nicotinic acid, ═══ Group B, one nonsustained-release tablet containing 50 mg. C-14 nicotinic acid, ▬ Group C, one nonsustained-release tablet containing 50 mg. C-14 nicotinic acid at 0, 4 and 8 hours.

less confused and moody. Personal care, memory, emotional stability, social attention improve. Fatigue, apathy and irritability are reduced.

A prescription for 100 tablets of Geroniazol TT will permit your patients to enjoy the benefits of time-prolonged nicotinic acid/pentylenetetrazol therapy, at an economical price. Dosage is only one tablet every 12 hours.

Contraindications: There are no known contraindications.

Precautions: Exercise caution when treating patients with a low convulsive threshold.

Side Effects: Side effects are rarely encountered, however due to the vasodilatation effect of nicotinic acid, transitory mild nausea, flushing, tingling and pruritus are possible.

Dosage: One tablet every 12 hours.

Supplied: Prescribe bottles of 100 tablets, to take advantage of recent price reduction.

References: 1. Report by Nuclear Science & Engineering Corp., Pittsburgh, Pa., in files of Philips Roxane Laboratories. 2. Connolly, R.: W. Virginia Med. J. *56*:263 (Aug.) 1960. 3. Curran, T. R., and Phelps, D. K.: Am. Pract. & Digest Treat. *11*:617 (July) 1960.

"First with the Retro-Steroids"
PHILIPS ROXANE LABORATORIES
Division of Philips Roxane, Inc., Columbus, Ohio
A Subsidiary of Philips Electronics and Pharmaceutical Industries Corp.

Geroniazol® TT

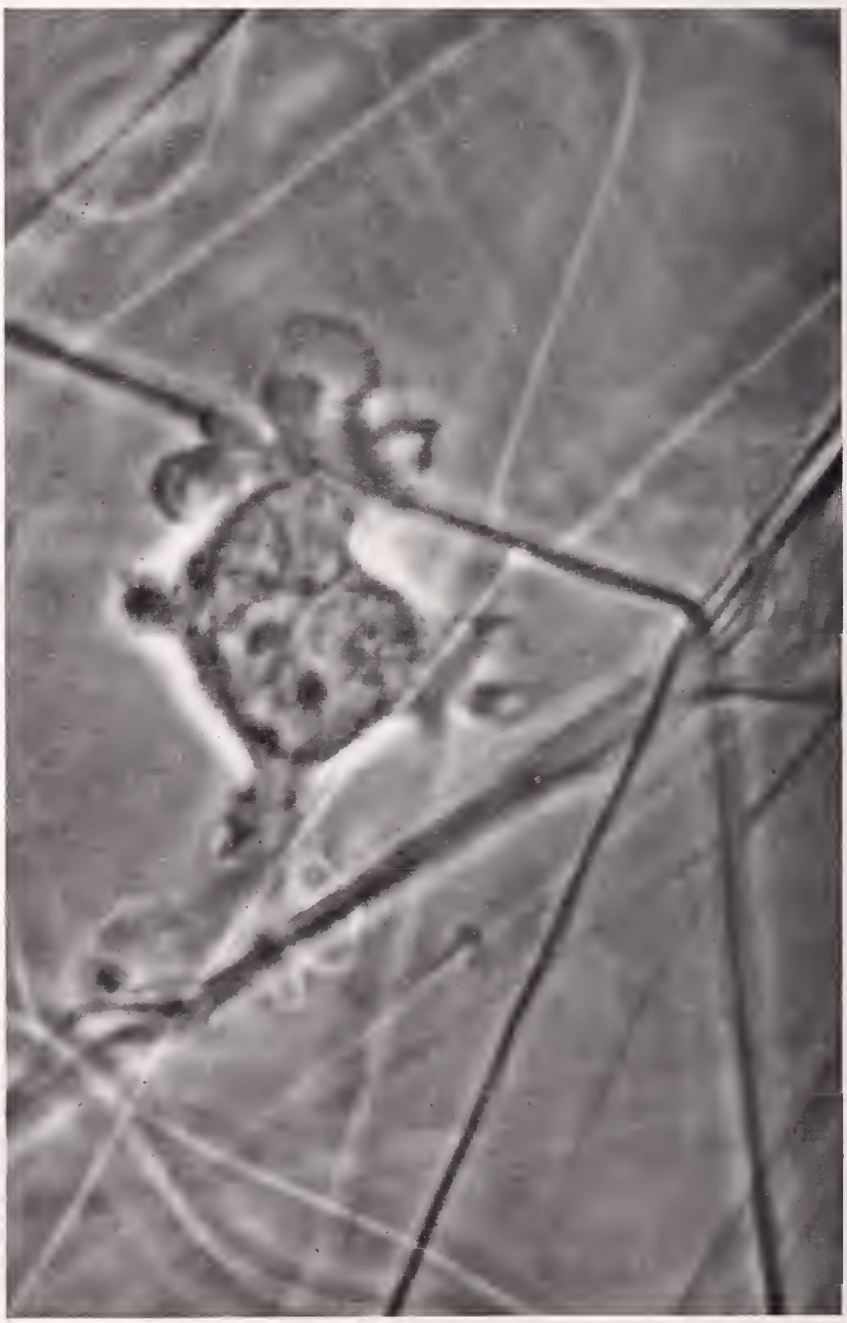
nicotinic acid 150 mg., pentylenetetrazol 300 mg.
Tempotrol® Time Controlled Tablet

INFLAMMATION:
A cellular fight for life

A SYNTEX REPORT based on recently developed hypotheses about topical corticosteroids, including the cellular theories of inflammation by Thomas F. Dougherty, Ph.D., University of Utah.

You are looking at a fibroblast fighting for life. This cell—one of the most common found in connective tissue—has literally been poisoned by cytotoxins released from other cells that have ruptured. Soon, if the abnormal activity of this fibroblast does not cease, it, too, will rupture and die—one more casualty in the inflammatory wave of destruction precipitated by injury.

Until a short time ago no one had ever witnessed such a scene at the cellular level. Now, through advanced cinemicrographic techniques, it is possible to view and photograph the inflammatory process as produced experimentally in living animal tissue. This method permits new insight into the mechanism of inflammation and the role of corticosteroids in therapeutic management. Equally important, these techniques shed new light on factors that may make one corticosteroid more effective than another—factors that can be correlated with other chemical, biologic, and clinical parameters.

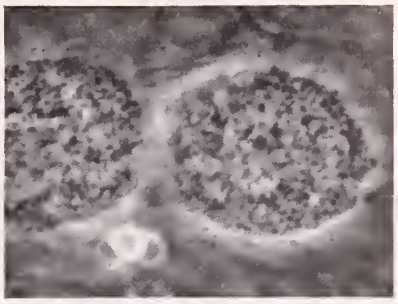


Visual evidence of how corticosteroids influence the inflammatory reaction

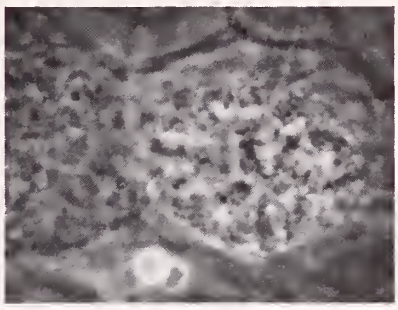
Working with phase-contrast cinemicrography on living animal tissue, Doctors Thomas F Dougherty and David Berliner of the University of Utah College of Medicine have actually filmed cellular events that occur during the inflammatory reaction. This remarkable study* and additional work by these investigators, as well as by others, have established a new theoretical biologic basis for the antiinflammatory effect of the corticosteroids. (It must be noted that other theories, such as the lysosome or so-called "suicide bag" theory, have been postulated, although it is quite likely that there are more similarities than differences among the various theoretical models.)

The inflammatory wave of destruction

In this investigation an injurious injection of gelatin is used to set off an inflammatory reaction in living mouse tissue. What follows is a wave of destructive cellular activity that comprises the inflammatory response to injury. Mast cells (which contain heparin, serotonin and histamine) take up water, swell and rupture, releasing their contents, which are toxic outside the mast cell wall. These toxins, in turn, cause disintegration of other cells (such as fibroblasts) and the release of additional toxic material. Capillaries, too, take up water and leak unformed blood elements, causing edema. And polymorphonuclears, lymphocytes and perithelial cells invade the inflamed site. As a result of all these changes, the cellular environment reaches a state of turmoil.



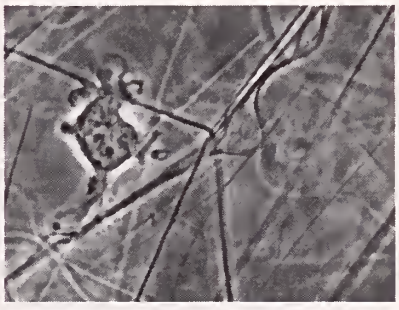
Phase-contrast microscopy showing mast cell before injury.



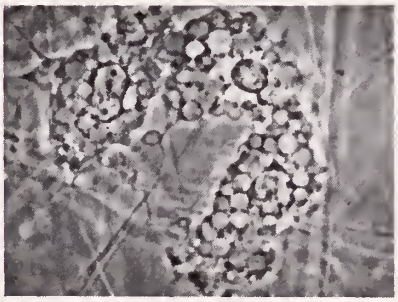
Mast cell (after injury) has broken up and released cytotoxins.

How corticosteroids change the picture

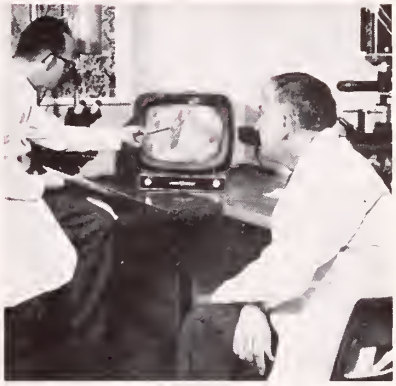
Corticosteroids appear to virtually stop the abnormal cellular activity that constitutes the inflammatory reaction. This permits the body's natural resources to clear up the inflamed area and repair the damaged tissue. This interpretation is supported by the fact that when the injurious gelatin solution is injected simultaneously with a corticosteroid —Synalar (fluocinolone acetonide)— the inflammatory pattern simply does not develop.



Fibroblast in high state of activity, much distorted.



Mast cells showing effects of corticosteroid action: cells are normal in size, shape and activity.



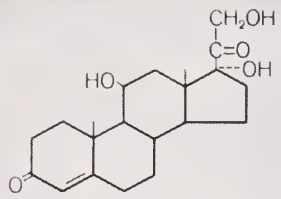
In summarizing his study Doctor Dougherty states: "...we also feel this work may explain why one corticosteroid helps a patient more rapidly and effectively than another. If it does, it is because one corticosteroid is the fastest, most effective inhibitor of the series of inflammatory events at the tissue level."

*A New View of Corticosteroid Action in Inflammatory Dermatoses, a film based on this study, is now available from your Syntex representative.

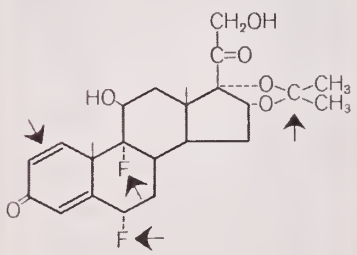
See last page for contraindications, precautions, side effects and dosage.

How advances in chemical design have achieved greater steroid potency

The chemical modification of corticosteroid molecules from the advent of hydrocortisone to the development of Synalar (fluocinolone acetonide) is a prime example of how biochemists can "design" to increase therapeutic activity and minimize undesirable side actions. Below, for example, we see the important changes that were made in reference to the hydrocortisone molecule to produce fluocinolone acetonide, one of the most active of all topical corticosteroids. As a result, a 0.01% preparation of Synalar (fluocinolone acetonide) has been reported to do the work of a 1% hydrocortisone product containing 100 times more cortiscosteroid. And it can often do it more effectively.



Hydrocortisone

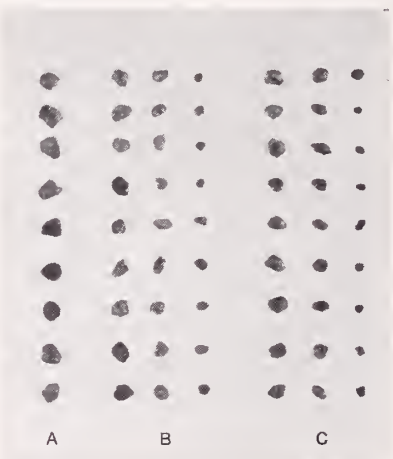


Fluocinolone Acetonide (Synalar)

- *a double bond between carbons 1 and 2*
- *fluorine substitutions at* both *the 6-α, and the 9-α positions*
- *the addition of the acetonide at the 16-α, 17-α positions, thus providing one of the most potent topical corticosteroids available.*

How bioassay tests are used to "predict" therapeutic potential

Biologic assays are another tool used by researchers to help establish the relative activity of corticosteroids. To date no single method of assaying corticosteroid activity has emerged as the ideal "yardstick" for predicting therapeutic potential. Taken together, however, these methods have proved useful. When such tests are run on various corticosteroids, a definite order of corticosteroid activity becomes evident. Compounds with the highest order of activity may be expected to merit clinical trial to establish their high therapeutic potential. When assayed by these methods, fluocinolone acetonide (Synalar) emerges as one of the most active topical corticosteroids, milligram for milligram, available for clinical application today.



THE THYMUS INVOLUTION ASSAY[1-4] is run on adrenalectomized rats. The sizes of the glands are measured, and the degree of involution caused by the steroid is determined as an indication of its potency. In the above photo, the comparative involution of thymus glands achieved with hydrocortisone and Synalar (fluocinolone acetonide) is shown. Untreated controls (A) show normal size. Group B – injected with 1, 2 and 4 mg. of hydrocortisone – show progressively smaller thymuses as does Group C – injected with fluocinolone acetonide – but with only 1/500th the dose of hydrocortisone.



THE ANTIGRANULOMA ASSAY[1-4] also utilizes adrenalectomized rats. Granulomas are induced by subcutaneous implantation of cotton pellets on either side of the thorax. The degree of granuloma inhibition achieved by a steroid reflects its potency. The above photo shows the inhibition of granuloma formation achieved with hydrocortisone and Synalar (fluocinolone acetonide). Untreated controls (A) show large, red granulomas adhering to the pellets. Group B, receiving hydrocortisone and Group C, receiving fluocinolone acetonide, show little, if any, granuloma formation. Fluocinolone acetonide produced the same effect as hydrocortisone with only 1/500th the dose. This assay, as well as the thymus involution assay, measures systemic rather than topical corticosteroid activity. Nevertheless, results by these methods correlate well with other assays and with the milligram potencies of topical steroids in current clinical use.

Worldwide clinical experience confirms the predictable therapeutic potential of Synalar

It is particularly gratifying that the promise of the advanced chemical design and high order of bioassay activity of Synalar (fluocinolone acetonide) has been confirmed by widespread therapeutic application. Indeed, the impressive clinical response rate of Synalar has been documented in no fewer than 232 papers from 22 countries.

Representative Clinical Results with Synalar*

Efficacy Documented in over 4,000 Patients

Condition	Number of Publications	Number of Patients	Significant Improvement†
Contact Dermatitis	27	750	713
Eczematous Dermatitis	21	472	409
Seborrheic Dermatitis	18	442	426
Atopic Dermatitis	24	460	426
Psoriasis	36	1,699	1,510
Neurodermatitis	18	351	324
Total	144	4,174	3,808

*Complete bibliography on request.

†Expressed by the authors as excellent, very good, good, complete remission of inflammation, etc.

PRESCRIBING INFORMATION

For initiation of therapy: Cream 0.025%, 5 and 15 Gm. tubes, 425 Gm. jars; *for emollient effect:* Ointment 0.025%, 15 Gm. tubes; *for maintenance therapy:* Cream 0.01%, 15 and 45 Gm. tubes, 120 Gm. jars; *for intertriginous or hairy sites:* Solution 0.01%, 20 cc. and 60 cc. plastic squeeze bottles; *for infected inflammatory dermatoses:* Neo-Synalar® Cream (0.025% fluocinolone acetonide, neomycin sulfate, equivalent to 0.35% neomycin base), 5 and 15 Gm. tubes.

CONTRAINDICATIONS: Tuberculous, fungal, and most viral lesions of the skin, (including herpes simplex, vaccinia, and varicella). Not for ophthalmic use. Contraindicated in individuals with a history of hypersensitivity to any of the components. PRECAUTIONS: Synalar preparations are virtually nonsensitizing and nonirritating. However, the solution may produce burning or stinging when applied to denuded or fissured areas. In some patients with dry lesions, the solution may increase dryness, scaling or itching. While topical steroids have not been reported to have an adverse effect on pregnancy, the safety of their use on pregnant females has not absolutely been established. Therefore, they should not be used extensively on pregnant patients, in large amounts, or for prolonged periods of time. Prolonged use of any antibiotic may result in overgrowth of nonsusceptible organisms; if this occurs, appropriate therapy should be instituted. When severe local infection or systemic infection exists, the use of systemic antibiotics should be considered, based on susceptibility testing. SIDE EFFECTS: Side effects are not ordinarily encountered with topically applied corticosteroids. As with all drugs, however, a few patients may react unfavorably to Synalar under certain conditions. The neomycin in Neo-Synalar Cream rarely produces allergic reactions.

REFERENCES: 1. Lerner, L. J., Bianchi, A., Turkheimer, A. R., Singer, F. M., and Borman, A.: Anti-inflammatory steroids: potency, duration and modification of activities. Ann NY Acad Sci 116:1071 (Aug. 27) 1964. 2. Idem: Comparison of anti-granuloma, thymolytic and glucocorticoid activities of anti-inflammatory steroids. Proc Soc Exp Biol Med 116:385 (June) 1964. 3. Ringler, A.: Activities of adrenocorticosteroids in experimental animals and man, in Dorfman, R. I.: Methods of hormone research, New York, Academic Press, 1964. vol. III. pp. 234-280. 4. Gubersky, V. R.: To be published.

fluocinolone acetonide — an original steroid from

SYNTEX LABORATORIES INC., PALO ALTO, CALIF.

For inflammatory dermatoses... by any measure a topical corticosteroid of choice

Synalar® (fluocinolone acetonide)

Milligram for milligram one of the most active topical corticosteroids available

Rapid and predictable in antiinflammatory and antipruritic activity

Results often comparable to those of systemic corticosteroids with fewer hazards

From a continuing study on nasal congestion . . .



timed to work while your patient does

A study being conducted by the Department of Otolaryngology, Greater Baltimore Medical Center is stockpiling evidence that points to the fast action and prolonged relief effected by Triaminic in the treatment of nasal congestion.

Begun in March 1966, the study to date has encompassed 85 patients with common nasal disorders—and measured their response to recommended doses of Triaminic tablets.

Timed to release its oral nasal decongestant and two antihistamines within 8 hours, Triaminic was found to effect partial or complete relief in better than 82% of the subjects treated. Clearing nasal obstruction. Reducing turbinate swelling. Making breathing easier.

It's a comforting thing to know that Triaminic *really* works.

Triaminic® *timed-release tablets*

Each timed-release tablet contains:

Phenylpropanolamine hydrochloride ..... 50mg. Pyrilamine maleate ..... 25mg. Pheniramine maleate ..... 25mg.

Side effects: Occasional drowsiness, blurred vision, cardiac palpitations, flushing, dizziness, nervousness or gastrointestinal upsets.

Precautions: The patient should be advised not to drive a car or operate dangerous machinery if drowsiness occurs. Use with caution in patients with hypertension, heart disease, diabetes or thyrotoxicosis.

DORSEY LABORATORIES • *a division of The Wander Company* • **LINCOLN, NEBRASKA 68501**

A breakthrough in the control of pain

Talwin®

brand of

pentazocine

(as lactate)

**a potent injectable non-narcotic—
may be used in place of morphine
and other narcotic analgesics**



A breakthrough in the control of pain

Talwin®

brand of **pentazocine®** (as lactate)

a potent injectable non-narcotic—may be used in place of morphine and other narcotic analgesics

Talwin 30 mg. relieves pain usually as quickly and effectively as morphine 10 mg.

whatever the intensity of the pain

whatever the cause of the pain

whatever the site† of the pain

whatever the chronicity of the pain

whatever the age†† of the patient

without the liability of narcotics

without the development of tolerance on prolonged use

with less risk of severe respiratory depression than with morphine

with less constipation

with less urinary retention

Clinical experience of more than 150 investigators with over 12,000 patients given varying dosages of Talwin shows that this potent injectable analgesic is not a narcotic.

Talwin has less risk of severe respiratory depression, urinary retention, and constipation than morphine—a great boon for postsurgical patients.

Talwin produces less nausea, vomiting and diaphoresis than meperidine.

Constipation and urinary retention are seldom a problem with Talwin.

Very rarely do hallucinations or disorientation occur (0.1% each).

No significant hepatic, renal, hematopoietic or neurologic disturbances have been reported.

Talwin is well tolerated even by the aged or very ill patients.

Used during active labor, its tolerance by the mother and newborn is comparable to meperidine's. As with all new drugs, Talwin should be used with caution in pregnant women and in women delivering premature infants.

Tolerance to the analgesic effect of Talwin has not developed with prolonged use.

Talwin gives significant relief of pain in from 15 to 20 minutes following I.M. or S.C. injection.

Talwin relieves pain usually for 3 hours or longer with a single injection; however, the duration may sometimes be less than with morphine.

*Its duration of action may sometimes be less than that of morphine.

†Should not be used for patients with increased intracranial pressure, head injury or pathologic brain conditions.

††Until sufficient experience is gained, Talwin should not be administered to children under 12 years of age.

86 per cent of medical and surgical patients obtained excellent to good relief with Talwin 30 mg. administered parenterally

Talwin
brand of pentazocine (as lactate)
used for pain of all types

Talwin has a wide range of usefulness in surgery

Types of surgical use	Number of patients	Efficacy				
		% Exc.	% Good	Exc. + Good	% Fair	% Poor
• Preoperative	118	31	52	83%	15	2
• Postoperative	914	58	28	86%	8	6
• Pre- and postoperative	12	75	17	92%	0	8
• Minor surgery	33	30	39	69%	0	31
• Traumatic	14	64	29	93%	7	0
• Dental	33	67	24	91%	3	6
Total patients.....1124						

Efficacy of 30 mg. Talwin I.M. and S.C. as related to types of surgical use in a cooperative study

Data in files of Department of Medical Research, Winthrop Laboratories.

High incidence of poor results in minor surgery is due primarily to one study involving change of burn dressings in children; 9 of 19 patients obtained poor results with dose used.

Talwin relieves all types of pain in acute and chronic medical disorders

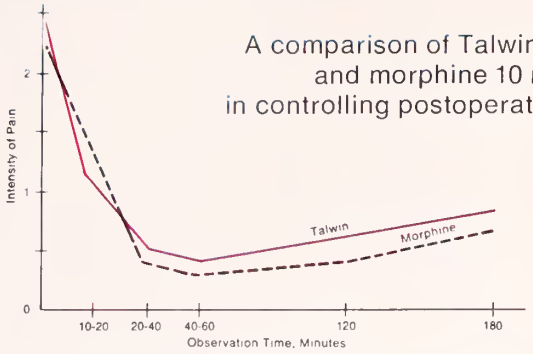
Type of medical pain	Number of patients	Percentage of relief				
		Excellent	Good	Exc. + Good	Fair	Poor
• Malignancy, pain in	161	44	37	81%	8	11
• Orthopedic; see also "Arthritis"	111	53	38	91%	5	4
• Cardiovascular pain; see also "Miscellaneous medical"	96	59	27	86%	6	7
• Genitourinary pain	83	42	33	75%	16	10
• Arthritis	76	33	51	84%	12	4
• Gynecologic pain	35	57	34	91%	6	3
• Cephalalgia	21	45	41	86%	9	5
• Gastrointestinal pain	19	89	5	94%	0	5
• Chest, including • Pleurisy • Pulmonary embolism and infarct • Lung abscess	12	83	17	100%	0	0
• Miscellaneous medical, including • Peripheral vascular disease • Thrombophlebitis • Cervical root pain • Facial neuralgia • Syringomyelia • Burns	108	50	39	89%	9	2
Total patients.....722						

Efficacy of 30 mg. Talwin I.M. and S.C. as related to types of medical pain in a cooperative study

Data in files of Department of Medical Research, Winthrop Laboratories.

See next page for additional product information

Talwin relieves pain as quickly as morphine



A comparison of Talwin 30 mg. and morphine 10 mg. I.M. in controlling postoperative pain*

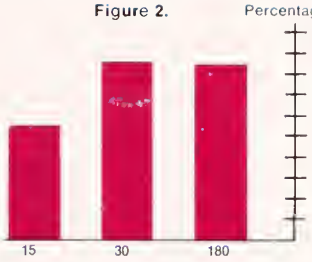
Figure 1.

Talwin 30 mg. proved equivalent to morphine 10 mg. in overall analgesic efficacy. During the early postmedication period (up to 40 minutes after drug injection), Talwin was superior in effect to morphine.

After observation periods ranging from 40 to 180 minutes there was no difference between the drugs in their effect on intensity. There were 141 and 119 complete patient records for Talwin and morphine, respectively, in this double-blind study. Other clinical investigators, studying duration, state that relief with Talwin may be obtained for up to three hours or longer, a period sometimes less than morphine's.

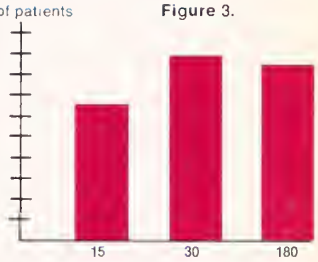
Talwin is as effective for severe pain (Fig. 2) as for moderate pain (Fig. 3)

Figure 2.



Per cent excellent to good relief of severe pain obtained with 30 mg. Talwin in 218 postoperative patients

Figure 3.



Per cent excellent to good relief of moderate pain obtained with 30 mg. Talwin in 203 postoperative patients

Talwin does not require a narcotics prescription or narcotics records

The World Health Organization Expert Committee on Dependence-Producing Drugs concluded that "...there was no need at this time for narcotics control of pentazocine [Talwin] internationally or nationally."‡

*Storer, E. H. Data in the files of the Sterling-Winthrop Research Institute.

†Cooperative study, data in the files of the Department of Medical Research, Winthrop Laboratories.

‡*World Health Organization Technical Report Series*, No. 343, 1966, p. 6

A breakthrough in the control of pain

Talwin®

brand of

pentazocine

(as lactate)

a potent injectable non-narcotic—may be used in place of morphine and other narcotic analgesics

Contraindications: *Increased Intracranial Pressure, Head Injury, or Pathologic Brain Conditions in which clouding of sensorium is undesirable.* Talwin (brand of pentazocine) should not be administered in these cases, since drug-induced sedation, dizziness, nausea, or respiratory depression could be misleading.

Precautions: *Pregnancy.* No teratogenic or embryotoxic effects attributable to the use of Talwin have been seen in extensive reproductive studies in animals; however, like all new drugs, Talwin should be given with caution to pregnant women. A large number of patients in labor have received the drug with no adverse reactions other than those that occur with commonly used strong analgesics. However, as with other strong analgesics, Talwin should be used with caution in women delivering premature infants.

Ambulatory Patients. Since sedation, dizziness, and occasional euphoria have been noted, ambulatory patients should be warned not to operate machinery, drive cars, or unnecessarily expose themselves to hazards.

Certain Respiratory Conditions. The possibility that Talwin (brand of pentazocine) may cause respiratory depression should be considered in treatment of patients with bronchial asthma. Talwin should be administered only with caution and in low dosage to patients with respiratory depression (e.g., from other medication, uremia, or severe infection), obstructive respiratory conditions, or cyanosis.

Patients Dependent on Narcotics. Because Talwin is a narcotic-antagonist, patients dependent on narcotics and receiving Talwin may occasionally experience certain withdrawal symptoms. Talwin should be given with special caution to such patients. It has been observed that some patients previously given narcotic-analgesics for one month or longer had mild withdrawal symptoms when the drug was replaced with the analgesic, Talwin. After a short period of adjustment the subjects were usually able and willing to continue taking Talwin, and relief of pain was satisfactory.

Nonaddicted Patients Receiving Narcotics. Symptoms believed to be indicative of antagonism to the opiate may be observed rarely with administration of Talwin to patients receiving opiates for a short time. Intolerance or untoward reactions are seldom observed after administration of Talwin to patients who have received single doses or who have had limited exposure to narcotics.

Impaired Renal or Hepatic Function. Although laboratory tests have not indicated that Talwin (brand of pentazocine) causes or increases renal or hepatic impairment, the drug should be administered with caution to patients with such impairment. Extensive liver disease appears to predispose to greater side effects (e.g., marked apprehension, anxiety, dizziness, sleepiness) from the usual clinical dose, and may be the result of decreased metabolism of the drug by the liver.

Myocardial Infarction. As with all drugs, Talwin (brand of pentazocine) should be used with caution in patients with myocardial infarction who have nausea or vomiting.

Biliary Surgery. Until further experience is gained with the effects of Talwin on the sphincter of Oddi, the drug should be used with caution in patients about to undergo surgery of the biliary tract.

Adverse Effects: Talwin is relatively free from the undesirable side effects associated with morphine, such as constipation, urinary retention, or severe respiratory depression. Furthermore, Talwin produces less nausea, vomiting, and diaphoresis than meperidine.

In over 12,000 patients who received Talwin intramuscularly, subcutaneously, or intravenously, nausea, the most frequent adverse effect, occurred in approximately 5.0 per cent. In decreasing order of occurrence were vertigo, dizziness or lightheadedness; vomiting; and euphoria. Respiratory depression was reported as an adverse reaction in 1.0 per cent.

The incidence of each of the other adverse effects was well below 1.0 per cent: constipation, circulatory depression, diaphoresis, urinary retention, alteration in mood (nervousness, apprehension, depression, floating feeling), hypertension, sting on injection, headache, dry mouth, flushed skin including plethora, altered uterine contractions during labor, dermatitis including pruritus, dreams, paresthesia, and dyspnea occurred rarely after administration of Talwin (brand of pentazocine). Furthermore, each of the following adverse reactions occurred in less than 0.1 per cent: tachycardia, visual disturbance (blurred vision, diplopia and nystagmus), hallucinations, disorientation, weakness or faintness, muscle tremor, chills, allergic reactions including edema of the face, taste alteration, insomnia, diarrhea, cramps, and miosis; laryngospasm in one patient.

Talwin has not produced severe respiratory embarrassment in adults (never apnea), even with large amounts. A small number of newborn infants whose mothers received Talwin during labor had transient apnea. The incidence of temporary diminution in the rate or strength of uterine contractions is low after administration of Talwin, similar to that following meperidine hydrochloride. (In reporting no interference with normal labor in patients receiving Talwin, one investigator further stated that the drug may increase uterine activity.) Generally, no significant fetal heart rate change occurs.

Laboratory tests of blood and of liver and kidney functions have revealed no significant abnormalities. A minimum and probably insignificant increase in the per cent of eosinophils in peripheral blood counts and bone marrow occurred occasionally.

Talwin is well tolerated by patients with diabetes mellitus, and no changes in insulin requirements have been observed.

Dosage and Administration: *Adults, Excluding Patients in Labor.* Average recommended single parenteral dose is 30 mg., by intramuscular, subcutaneous, or intravenous route; may be repeated every three to four hours. Pain has been relieved in most patients with not more than three doses daily. Infrequently, selected patients have received single doses as high as 60 mg.

Patients in Labor. A single, intramuscular 30 mg. dose has been most commonly administered. An intravenous 20 mg. dose has given adequate pain relief to some patients in labor when contractions become regular, and this dose may be given two or three times at two- to three-hour intervals, as needed.

Children Under 12 Years of Age. Since clinical experience in children under twelve years of age is limited, the use of Talwin (brand of pentazocine) in this age group is not recommended.

Duration of Therapy. Patients with chronic pain who received Talwin for prolonged periods (e.g., over 300 days) experienced no withdrawal symptoms even when administration was stopped abruptly; furthermore, there was no tolerance to the analgesic effect.

CAUTION. Talwin should not be mixed in the same syringe with soluble barbiturates because precipitation will occur.

Treatment of Overdosage or Respiratory Depression. Talwin has not produced apnea or severe respiratory embarrassment in adults, even in large doses. Occasionally, however, moderate respiratory depression may occur. Means of maintaining proper oxygenation should be available in case of overdosage or respiratory depression, and methylphenidate (Ritalin®) should be administered parenterally. The usual narcotic-antagonists, such as nalorphine, are not effective respiratory stimulants for depression due to Talwin.

How Supplied: Ampuls of 1 ml., containing Talwin® (pentazocine) as lactate equivalent to 30 mg. base and 2.8 mg. sodium chloride, in Water for Injection. **Boxes of 10, 25, and 100.**

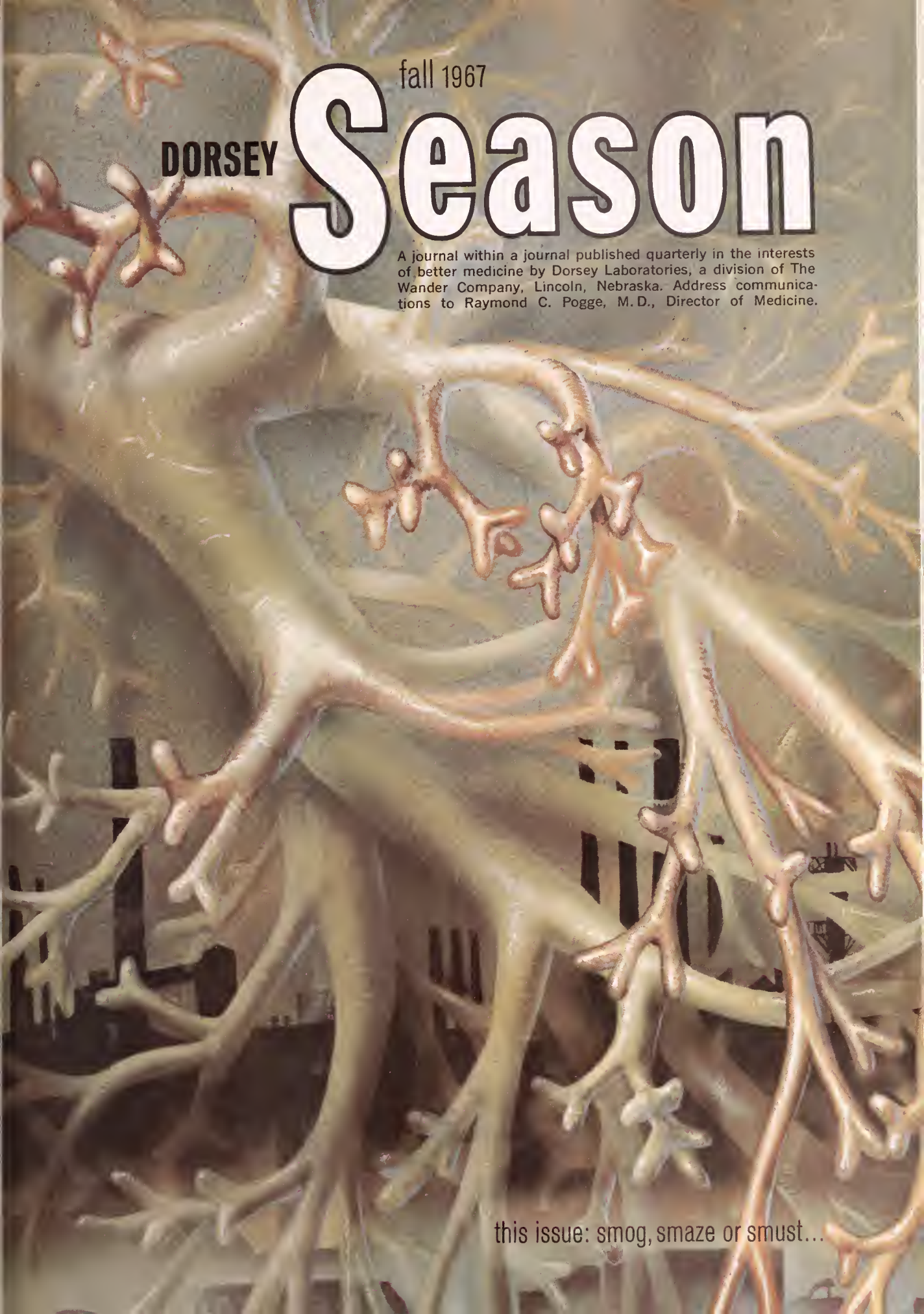
Multiple dose vials of 10 ml., each 1 ml. containing Talwin® (pentazocine) as lactate equivalent to 30 mg. base, 2 mg. acetone sodium bisulfite, 1.5 mg. sodium chloride, and 1 mg. methylparaben as preservative, in Water for Injection. **Boxes of 1.**

The pH of Talwin solutions is adjusted between 4 and 5 with lactic acid and sodium hydroxide.

Winthrop

Winthrop Laboratories, New York, N.Y. 10016

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fall 1967

DORSEY Season

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this issue: smog, smaze or smust...

Smog, smaze or smust...effects of air pollution on upper respiratory tract

Nathan Flaxman, M.D., Diplomate, American Board of Internal Medicine, Chicago, Illinois

In Los Angeles it is *smog* (smoke and fog). In New York City *smaze* (smoke and haze). In El Paso *smust* (smoke and dust). The original factor was smoke plus such natural phenomena as fog, haze and dust, but air pollution has mushroomed from a smoke problem in our industrial cities into a major economic, esthetic and public health problem that affects practically every American locality and citizen.[1,2] Respiratory disease, of course, is by far the most costly effect of air pollution, for contaminated air can aggravate our illnesses, deplete our strength and shorten our life span.[1]

The greatest problem in dealing with solid wastes is that they are not quickly returned to dust. To aid the decomposing process, the great bulk of such waste is burned, polluting our air in the process.[3] Dr. Jack McKee of the California Institute of Technology[4] has calculated that in Los Angeles County, which has more than six million people, about three pounds of gaseous wastes per person per day (on a dry-weight basis) enter the atmosphere. This is twice as much as solid refuse disposal and six times as much as the contaminants in waste water. It is estimated that in New York City, 730 pounds of pollutants, a little over half the size of a compact two-door sedan of foreign make, is annually thrown into the air for each man, woman and child in the city.[5]

Air pollution is an evident factor, not only in the common cold and upper respiratory disease, but also in chronic bronchitis,[2] pulmonary emphysema,[6] bronchial asthma,[7] pneumonitis and lung cancer.[8] Its effect on the incidence of pulmonary tuberculosis is unproved,[9] although it is conceivable that the presence of various materials polluting the air might do this. A siege of smog in Denver, the "mile high city," in December 1965 was accompanied by respiratory infection that doubled normal absentee rates in schools, factories and city government.[10]

While air pollution is only one factor, it has become important in the causes of most of the afflictions of the respiratory tract. This has been shown not only by the Denver occurrence, but also by detailed study[2] of respiratory illness in a small group of 313 men



from October 1962 to May 1963 when there were 202 episodes involving the upper respiratory tract. The attack rate of illness was related in time to increased concentration of both smoke and sulphur dioxide in the atmosphere of the district in which the men lived.

Other factors often mentioned, include exposure to those who have colds, exposure to extreme changes of temperature, allergy and bacterial infection. However, when low individual resistance due to lack of rest, overwork, fatigue, improper or unbalanced diet, previous illness and emotional stress are included as causes, we enter the realm of somewhat obscure relationships. Much more emphasis can be placed on the role of polluted air.

The symptoms, signs and complications of involvement of the upper respiratory tract, especially the common cold, are the same regardless of the causative factor. Swelling of the lining of the nose, the scratchy dry throat, the discharge from the nose at first watery then thicker, discolored and more tenacious, the eyes tearing, and frequent sneezing are all part of the Number 1 human ailment. Concurrent or residual sinusitis when mucus is trapped there, middle ear involvement due to interference with drainage, laryngitis and bronchitis are complications of the common cold. The primary interference is with a most important function of the nose—the cleansing of foreign matter in the first line of "air defense" to prevent it from entering the breathing tract.

However, the diagnosis and subsequent decision on how to treat the patient so affected rests basically on the relief of symptoms that cause him the misery. The stuffed, runny nose, the clogged ears, and the harsh dry cough—all the symptoms that make common cold sufferers feel miserable and interfere with their sleep—can be alleviated with medications of the oral nasal decongestant/antihistamine combination type. The burning sensation in the throat, soreness of the chest and even chest pain can also be relieved by such medication. Rest in bed if there is fever (but confined to home at least), liberal fluids, uniformly warm surroundings and adequate humidity in the room, are all helpful adjuncts to the medication. Most common cold sufferers recover rapidly and are symptom-free in four to ten days.

Further treatment, altered by the fact that the affliction hangs on for more than the usual duration of the common cold, requires consideration of allergy, which is most frequently the prolonging factor. But air pollution itself may often be the culprit.

(Concluded on following page)

For nature's hazards:
nasal congestion
due to seasonal
allergies and
summer colds



Triaminic® *syrup*

Each teaspoonful (5 ml.) contains:

Phenylpropanolamine hydrochloride	12.5 mg.
Pheniramine maleate	6.25 mg.
Pyrilamine maleate	6.25 mg.

For nasal congestion regardless of cause, you can bring quick, lasting comfort to your little patients with Triaminic Syrup. You may occasionally encounter these side effects: drowsiness, blurred vision, cardiac palpitations, flushing, dizziness, nervousness or gastrointestinal upsets. Precautions: the possibility of drowsiness should be considered by patients engaged in mechanical operations requiring alertness. Use with caution in patients with hypertension, heart disease, diabetes, or thyrotoxicosis.

(Advertisement)



At the Third National Conference on Air Pollution held recently, it was emphasized that this subject had received more attention in the past four years than in all previous history. Spicer,[11] an active participant at this conference, reiterated that it behooves the practicing physician to be aware of trends in respiratory disease and to accept a major role in community action relating to air pollution and respiratory health. By taking a positive stand physicians have been instrumental in the development of anti-pollution legislation. An outstanding example is Los Angeles where major steps have been taken by abolishing coal burning, and even banishing oil burning, seven months a year. Natural gas must be used instead and it must be used by industry when available. Backyard incinerators have been abolished in favor of landfill disposal, and building incineration ended except for a few expensive smokeless furnaces.[10] Concerted action can be taken against particular industrial nuisances. One company that disregarded complaints discovered its error when thousands of its credit cards were returned by irate customers who decided to patronize competing companies.[12]

Summary. Respiratory disease is the most important and most costly effect of air pollution, whether termed smog, smaze, or smust. Air pollution is an economic, esthetic and public health problem that affects practically every American locality and citizen. New sources of air pollution are invisible and odorless, but the harmful gases and liquid droplets are there. Triggered by sunlight, some of these undergo mid-air chemical changes and the results are even more irritating to the upper respiratory tract. The symptoms, signs and complications, especially of the upper respiratory tract, can be readily aborted by modern medication but may be unduly prolonged by polluted air. In steps taken to prevent this, the practicing physician can take a major role.

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How can he be a sport with a runny nose?



For summer allergies, summer colds, or nasal congestion due to almost any cause, you prescribe quick r-e-l-i-e-f with Triaminic. It's ideal for summer allergies:

1. Acts in 15-30 minutes due to decongestant.
2. Follows up with balanced dual antihistamines.
3. Up to 24-hour 'round the clock relief when dosed one tablet at morning, midafternoon and evening.

Summer time is sport time and who can be a sport with a runny nose?

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Triaminic® relieves summer allergies

Each timed-release tablet contains:

Phenylpropanolamine hydrochloride	50 mg.
Pheniramine maleate	25 mg.
Pyrilamine maleate	25 mg.

Side effects: Occasional drowsiness, blurred vision, cardiac palpitation, flushing, dizziness, nervousness or gastrointestinal upsets.

Precautions: The patient should be advised not to drive a car or operate dangerous machinery if drowsiness occurs. Use with caution in patients with hypertension, heart disease, diabetes or thyrotoxicosis.

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Why Wait?



*Based on Statistical Report, U.S. Dept. Commerce, ed. 86, and Fisher, G. F., and Vavra, H. M.: Pub. Health Rep. 80:961 (Nov.) 1965.

Note: DEXTROSTIX is not meant to replace the more precise analytical laboratory procedures such as needed in glucose tolerance testing.

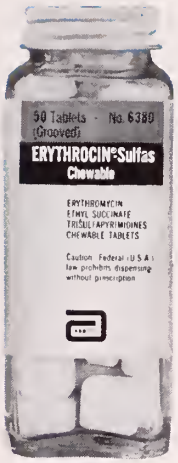
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Ames



Perhaps there have been times when you wanted to prescribe erythromycin and triple sulfas for little patients. Now you can—with a choice of two new fine-tasting pediatric forms.

New–Two Pediatric Forms of Erythromycin and Triple Sulfas





ERYTHROCIN®-SULFAS Chewable (Erythromycin ethyl succinate-trisulfapyrimidines chewable tablet)

In clinical trials[1,2], this orange-flavored tablet was given to 55 patients, aged four months to 18 years.

Diagnoses (multiple in some cases) represented a cross section of bacterial infections commonly seen in pediatric office practice.

Therapy was given from three to 12 days, with an average of six days.

Of the 55 patients, 30 were reported cured within 72 hours, while 22 showed partial recovery within the same time, and subsequent clinical cure.

A clinical cure rate of 94.5%

ERYTHROCIN®-SULFAS Granules (Erythromycin ethyl succinate-trisulfapyrimidines granules for oral suspension)

87 patients were treated[1,2]—all children, ages four months to 15 years.

The diagnoses were multiple in some cases and were chiefly bacterial infections of the respiratory tract.

Dosage was maintained from three to 10 days; average treatment was five days. All of the ill children accepted the orange-flavored suspension favorably.

53 were clinically cured within 72 hours, while 32 showed partial relief within the same time, and subsequent clinical cure.

701358

A clinical cure rate of 97.7%

1. Case Reports on File, Dept. Clin. Development, Abbott Laboratories.
2. Polley, R.F.L., Use of Erythromycin-Sulfas in Office Practice, Western Med., 7:177, July, 1966.

ABBOTT

Brief Summary on next page

ERYTHROCIN®-SULFAS
Brief Summary

Contraindications: Known sensitivity to erythromycin or sulfonamides. Because of the possibility of kernicterus with sulfonamides, do not use in pregnancy at term, premature or newborn infants.

Warnings: As with other forms of sulfonamide therapy, carefully evaluate patients with liver or kidney damage, urinary obstruction, or blood dyscrasia. Deaths have been reported from hypersensitivity reactions and blood dyscrasias following use of sulfonamides. Perform blood counts and liver and kidney function tests if used repeatedly at close intervals or for long periods.

Precautions, Side Effects: Occasionally mild abdominal discomfort, nausea or vomiting may occur with erythromycin, generally controlled by reduction of dosage. Mild allergic reactions (such as urticaria and other skin rashes) may occur. Serious allergic reactions have been extremely infrequent. Use sulfonamides with caution in patients with a history of allergy. Assure adequate fluid intake to prevent crystalluria and institute alkali therapy if indicated. If overgrowth of nonsusceptible organisms occurs, withdraw the drug and institute appropriate treatment. If a patient should show signs of hypersensitivity, appropriate countermeasures (e.g. epinephrine, steriods, etc.) should be administered and the drug withdrawn.

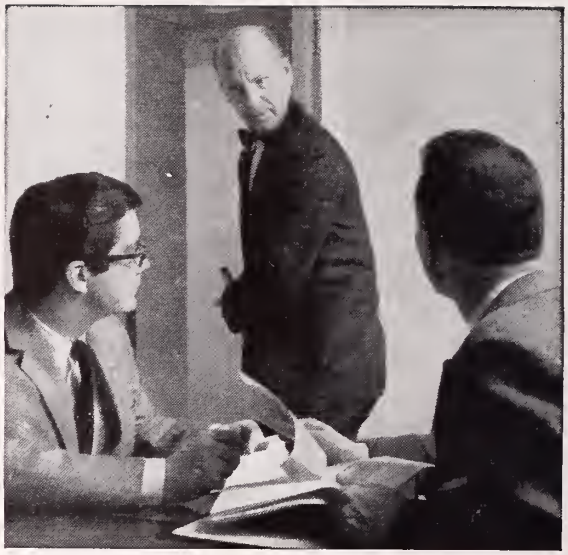
Adverse Reactions: Sulfonamide therapy may be associated with headache, nausea, vomiting, urticaria, diarrhea, hepatitis, pancreatitis, blood dyscrasias, neuropathy, drug fever, skin rash, injection of the conjunctiva and sclera, petechiae, purpura, hematuria and crystalluria.

Side effects due to erythromycin are infrequent, but occasional abdominal discomfort, nausea, or vomiting, urticaria and other skin rashes may occur.

Supplied: The Granules for Oral Suspension come in bottles of 60 ml. and 150 ml. The Chewable tablets are in bottles of 50. Each 5-ml. teaspoonful of reconstituted Granules or each Chewable tablet provides erythromycin ethyl succinate equivalent to 125 mg. of erythromycin activity and 167 mg. of each of sulfadiazine, sulfamerazine and sulfamethazine.

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He leaves to make an urgent call But doesn't use the phone at all

Parepectolin for quick relief of acute diarrhea
...soothes colicky pain with paregoric
...consolidates fluid stools with pectin
...adsorbs irritants with kaolin, and protects intestinal mucosa·

Whether it's a 24-hour "bug", a food problem, or simply nervousness and anxiety, Parepectolin will bring the diarrhea under control until etiology can be determined. In some cases, Parepectolin may be all the therapy necessary.

Parepectolin®

Each fluid ounce of creamy white suspension contains:
Paregoric (equivalent)..... (1.0 dram) 3.7 ml.
Contains opium (¼ grain) 15 mg. per fluid ounce.
warning: may be habit forming
Pectin ..... (2½ grains) 162 mg.
Kaolin (specially purified).... (85 grains) 5.5 Gm.
(alcohol 0.69%)
Usual Adult Dose: One or two tablespoonfuls three times daily.

ROER

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Times change and classic lobar pneumonia is rare. Your next pneumonia patient may have an atypical clinical picture and perhaps a pathogen in his sputum such as *H. influenzae* or *Mycoplasma pneumoniae* (Eaton Agent), which is believed to be responsible for one out of every five cases of pneumonia. That's why it makes sense to keep one step ahead—and prescribe the *true* broad-spectrum antimicrobial activity of DECLOMYCIN.

With DECLOMYCIN, you get effective action against *both H. influenzae* and *Mycoplasma pneumoniae*, plus prolonged high levels of antibiotic activity in the blood and the lung tissue. You're one step ahead with...

DECLOMYCIN®
DEMETHYLCHLORTETRACYCLINE

Lederle

For a wide range of everyday infections—respiratory, urinary tract and others—in the young and aged—the acutely or chronically ill.

For common and unusual pneumonias

DECLOMYCIN Demethylchlortetracycline should be equally or more effective therapeutically than other tetracyclines when the offending organisms are tetracycline-sensitive.

Contraindication: History of hypersensitivity to demethylchlortetracycline.

Warning—In renal impairment, usual doses may lead to excessive accumulation and liver toxicity. Under such conditions, lower than usual doses are indicated, and, if therapy is prolonged, serum level determinations may be advisable. A photodynamic reaction to natural or artificial sunlight has been observed. Small amounts of drug and short exposure may produce an exaggerated sunburn reaction which may range from erythema to severe skin manifestations. In a smaller proportion, photoallergic reactions have been reported. Patients should avoid direct exposure to sunlight and discontinue drug at the first evidence of skin discomfort. Necessary subsequent courses of treatment with tetracyclines should be carefully observed.

Precautions—Overgrowth of nonsusceptible organisms may occur. Constant observation is essential. If new infections appear, appropriate measures should be taken. In infants, increased intracranial pressure with bulging fontanels has been observed. All signs and symptoms have disappeared rapidly upon cessation of treatment.

Side Effects—Gastrointestinal system—anorexia, nausea, vomiting, diarrhea, stomatitis, glossitis, enterocolitis, pruritus ani. Skin—maculopapular and erythematous rashes. A rare case of exfoliative dermatitis has been reported. Photosensitivity; onycholysis and discoloration of the nails (rare). Kidney—rise in BUN, apparently dose related. Hypersensitivity reactions—urticaria, angioneurotic edema, anaphylaxis. Teeth — dental staining (yellow-brown) in children of mothers given this drug during the latter half of pregnancy, and in children given the drug during the neonatal period, infancy and early childhood. Enamel hypoplasia has been seen in a few children. If adverse reaction or idiosyncrasy occurs discontinue medication and institute appropriate therapy.

Average Adult Daily Dosage: 150 mg q.i.d. or 300 mg b.i.d. Should be given 1 hour before or 2 hours after meals, since absorption is impaired by the concomitant administration of high calcium content drugs, foods and some dairy products. Treatment of streptococcal infections should continue for 10 days, even though symptoms have subsided.

Capsules: 150 mg; **Tablets:** film coated, 300 mg, 150 mg, and 75 mg of demethylchlortetracycline HCl.

DECLOMYCIN®
DEMETHYLCHLORTETRACYCLINE

LEDERLE LABORATORIES, A Division of
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"Man's best friend" in wintertime diarrheas

In winter "flu" and viral gastroenteritis, Donnagel (4 oz. size!) can bring aid and comfort to sufferers from both diarrhea and its discomforts because it contains kaolin and pectin *plus* belladonna alkaloids (as in Donnatal®). Donnagel treats the whole diarrhea problem. Available on your prescription or recommendation.

For acute, non-specific diarrheas **Donnagel® -PG** (Donnagel with paregoric equivalent). Donnagel formula plus powdered opium, USP, 24.0 mg. (equivalent to paregoric 6 ml.) (warning: may be habit forming). Alcohol, 5%.

All the antidiarrheal benefits of paregoric without the unpleasant taste. Real banana flavor makes it acceptable, even to children. See product literature before prescribing.

A. H. Robins Company
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CLEAR THE TRACT!
ROBITUSSIN®



THERE'S A FORMULATION FOR EVERY COUGHING NEED

All the Robitussins contain glyceryl guaiacolate, the outstanding expectorant agent that greatly increases the output of lower respiratory tract fluid. Increased RTF volume exerts a demulcent effect on the tracheo-bronchial mucosa, promotes ciliary action, and makes thick, inspissated mucus less viscid and easier to raise.

For coughs of colds and "flu"
ROBITUSSIN®
Each 5 cc. contains:
Glyceryl guaiacolate . . . . . 100 mg.
Alcohol, 3.5%

For unproductive allergic coughs
ROBITUSSIN® A-C
Each 5 cc. contains:
Glyceryl guaiacolate . . . . . 100 mg.
Pheniramine maleate . . . . . 7.5 mg.
Codeine phosphate . . . . . 10.0 mg.
(warning: may be habit forming)
Alcohol, 3.5%

Non-narcotic for 6-8 hour cough control
ROBITUSSIN®-DM
Each 5 cc. contains:
Glyceryl guaiacolate . . . . . 100 mg.
Dextromethorphan hydrobromide . 15.0 mg.
Alcohol, 1.4%

New! Clears sinuses and nasal stuffiness as it relieves cough
ROBITUSSIN®-PE
Each 5 cc. contains:
Glyceryl guaiacolate . . . . . 100 mg.
Phenylephrine hydrochloride . . . 10.0 mg.
Alcohol, 1.4%

	ROBITUSSIN	ROBITUSSIN A-C	ROBITUSSIN-DM	ROBITUSSIN-PE
EXPECTORANT	●	●	●	●
DEMULCENT	●	●	●	●
COUGH SUPPRESSANT		●	●	
ANTIHISTAMINE		●		
LONG-ACTING (6-8 HOURS)			●	
NASAL, SINUS DECONGESTANT				●

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A-H-ROBINS

when bursitis hits a 280-lb. tackle, hit back with Butazolidin alka



Indications: Osteoarthritis, rheumatoid arthritis, rheumatoid spondylitis, psoriatic arthritis, acute gout, painful shoulder (peritendinitis, capsulitis, bursitis and acute arthritis of that joint), acute superficial thrombophlebitis.

Contraindications: Edema; danger of cardiac decompensation; history or symptoms of peptic ulcer; renal, hepatic or cardiac damage; history of drug allergy; history of blood dyscrasia. The drug should not be given when the patient is senile or when other potent drugs are given concurrently. Large doses of Butazolidin alka are contraindicated in glaucoma.

Warning: If coumarin-type anticoagulants are given simultaneously, watch for excessive increase in prothrombin time. Instances of severe bleeding have occurred. Pyrazole compounds may potentiate the pharmacologic action of sulfonylurea, sulfonamide-type agents and insulin. Carefully observe patients receiving such therapy. Use with great caution in the first trimester of pregnancy.

Precautions: Before prescribing, carefully select patients, avoiding those responsive to routine measures as well as contraindicated patients. Obtain a detailed history and a complete physical and laboratory examination, including a blood count. The patient should not exceed recommended dosage, should be closely supervised and should be warned to discontinue the drug and report immediately if fever, sore throat, or mouth lesions (symptoms of blood dyscrasia); sudden weight gain (water retention); skin reactions; black or tarry stools or other evidence of intestinal hemorrhage occur. Make regular blood counts. Discontinue the drug immediately and institute countermeasures if the white count changes significantly, granulocytes decrease, or immature forms appear. Use greater care in the elderly and in hypertensives.

Adverse Reactions: The most common are nausea, edema and drug rash. Swelling of the ankles or face may be minimized by withholding dietary salt, reduction in dosage or use of diuretics. In elderly patients and in those with hypertension the drug should be discontinued with the appearance of edema. The drug has been associated with peptic ul-

For 280-lb. tackles—or 108-lb. housewives—Butazolidin alka can hasten recovery from the agonizing pain of shoulder bursitis.

It's not for every patient. Check carefully the Contraindications, Warning and Precautions shown below.

And adverse reactions may occur. The most common are nausea, edema and rash. Rarely, agranulocytosis has been reported. All adverse reactions are listed below, too.

Play-for-pay or workaday patients—when they come up with shoulder bursitis and your clinical judgment indicates Butazolidin alka—go with it.

And watch the comeback.



cer and may reactivate a latent peptic ulcer. The patient should be instructed to take doses immediately before or after meals or with milk to minimize gastric upset. Mild drug rashes frequently subside with reduction of dosage. However, rash accompanied by fever or other systemic reactions usually requires withholding medication. Purpuric rash has also been reported. Agranulocytosis, exfoliative dermatitis, Stevens-Johnson syndrome, or a generalized allergic reaction similar to serum sickness may occur and require permanent withdrawal of medication. Stomatitis, salivary gland enlargement, vomiting, vertigo and languor may occur. Leukemia and leukemoid reactions have been reported. While not definitely attributable to the drug, a causal relationship cannot be excluded. Thrombocytopenic purpura and aplastic anemia may occur. Confusional states, agitation, headache, blurred vision, optic neuritis and transient hearing loss have been reported, as have hyperglycemia, hepatitis, jaundice, and several cases of anuria and hematuria. With long-term use, reversible thyroid hyperplasia may occur infrequently. Moderate lowering of the red cell count due to hemodilution may occur. 6509-V(B)R2

Butazolidin® alka

Capsules

100 mg. phenylbutazone
100 mg. dried aluminum hydroxide gel
150 mg. magnesium trisilicate
1.25 mg. homatropine methylbromide

Dosage in painful shoulder: Initial: 3 to 6 capsules daily in 3 or 4 equal doses. Trial period: 1 week. Maintenance dosage should not exceed 4 capsules daily; response is often achieved with 1 or 2 capsules daily.

For complete details, please see full prescribing information.

Geigy Pharmaceuticals
Division of Geigy Chemical Corporation, Ardsley, New York

Geigy

Vasomist

(ANTIHISTAMINIC)
VASOCONSTRICTOR, NASAL DECONGESTANT AND LOCAL ANTIHISTAMINIC

Active Ingredients:
Phenylephrine Hcl 0.25%
Phenylpropanolamine Hcl .. 0.50%
Chlorobutanol 0.15%
Tripelennamine Hcl 0.50%
In Isotonic Solution

Vasomist

(PLAIN)

VASOCONSTRICTOR AND NASAL DECONGESTANT

Active Ingredients:
Phenylephrine Hcl 0.25%
Phenylpropanolamine Hcl ... 0.50%
Chlorobutanol 0.15%
In Isotinic Solution

USE: Temporary relief of nasal congestion due to colds and hay fever.
DIRECTIONS: Adults and Children: Instill two or three drops into each nostril, using no more than needed to provide relief. Repeat every three to four hours as needed but not oftener.

AVAILABILITY
In plastic squeeze bottles containing ¾ fluid oz. and in dropper bottles containing 1 fluid oz.

HUMCO LABORATORY
TEXARKANA, ARK.-TEX.



HUMCO LABORATORY
TEXARKANA, ARK.-TEX.
Our Integrity is Your Guarantee



A Building Block approach to treating hypertension

With these three therapeutic building blocks you can create a once-a-day regimen to fit almost any degree of hypertension. See the following pages for details . . .



Consider starting your hypertensives on this basic thiazide

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A single daily dose of Enduron provides sodium excretion around the clock

Enduron is a true 24-hour single-dose thiazide. Its sodium excretion is not squeezed into an abrupt peak during the first several hours. It is well-sustained in a plateau-like effect—with little reduction for the first 12 hours, and decline thereafter only gradual.

Potassium loss, by contrast, is low. It reaches an early minor peak, then subsides rapidly. Moreover, since dosage is but once a day, there is but one daily peak of potassium loss. As with all thiazides, however, dietary potassium supplementation should also be considered, especially in long or intensive therapy.

Use Enduron as an ideal starting therapy in mild hypertension. Use it too, as a basic therapeutic building block with which other agents can be joined, for managing your more resistant hypertensives.

Once a day, every day

ENDURON®
METHYCLOTHIAZIDE



DAILY DOSAGE RANGE	Minimum	Usual	Intermediate	Maximum
	2.5 mg. tablet	5 mg. tablet	7.5 mg.	10 mg.

See Brief Summary on final page of advertisement.

To build added response, shift to Enduronyl

The deserpidine component adds enhanced antihypertensive activity

The rauwolfia component of Enduronyl is deserpidine (Harmonyl®), a purified crystalline alkaloid supplied only by Abbott. It augments Enduron with its own antihypertensive and tranquilizing action.

Thus the combined clinical effect of these two therapeutic building blocks in Enduronyl is greater than can ordinarily be achieved with either alone.

To add flexibility, Enduronyl comes in two strengths: regular and Forte. Both provide 5 mg. of Enduron. The variation is where most helpful: in the deserpidine. The tablets are scored, and give a surprisingly wide and economical choice of once-a-day doses (see below).

Choose Enduronyl for your patients in the broad range of mild to moderate hypertension. Patient acceptance is excellent!



Once a day, every day

ENDURONYL®

METHYCLOTHIAZIDE 5 MG. WITH DESERPIDINE 0.25 MG.

ENDURONYL FORTE

METHYCLOTHIAZIDE 5 MG. WITH DESERPIDINE 0.5 MG.

	Minimum	Usual	Intermediate	Maximum
DAILY DOSAGE RANGE	2.5 mg. methyclothiazide 0.125 mg. deserpidine	5 mg. methyclothiazide 0.25 mg. deserpidine	7.5 mg. methyclothiazide 0.375 mg. deserpidine	10 mg. methyclothiazide 0.5 mg. deserpidine
DAILY DOSAGE RANGE	2.5 mg. methyclothiazide 0.25 mg. deserpidine	5 mg. methyclothiazide 0.5 mg. deserpidine	7.5 mg. methyclothiazide 0.75 mg. deserpidine	10 mg. methyclothiazide 1 mg. deserpidine

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707075-R

Eutonyl affords a different kind of basic therapy for moderate to severe cases

ABBOTT

Effect tied to reduced peripheral vascular resistance; no central depressant action

Eutonyl is a unique nonhydrazine agent. It is reported to act by reducing peripheral vascular resistance.[1,2]

In clinical trials, significant reductions in mean blood pressure were seen in 84% of patients studied—all were moderate to severe cases. Eutonyl lowers diastolic in proportion to systolic, and in about half of the cases studied, reductions in the sitting and recumbent positions were nearly as great as in the standing position.

Most important: There is no central depressant action. In fact, some patients reported an *increased* sense of well being.

Here, then, is a highly effective *basic treatment* for moderate to severe cases—and one that will not hamper your patient with lethargy or drowsiness while on treatment.

Once a day, every day

EUTONYL®
PARGYLINE HYDROCHLORIDE



DAILY DOSAGE RANGE	Minimum	Usual starting	Intermediate	Maximum
	10 mg. tablet	25 mg. tablet	50 mg. tablet or as needed	200 mg.

1. Brest, A. N., et al., Cardiac and Renal Hemodynamic Response to Pargyline, Ann. N. Y. Acad. Sci., 107-1016, 1963.
2. Winsor, T., Pargyline Hydrochloride, Hypertension, Urinary Tryptamine, and Vascular Reflexes, Geriatrics, 19:598, Aug., 1964.

See Brief Summary on final page of advertisement.

Eutron adds thiazide for enhanced therapy with milder side effects

Only a 7/4 mm. span between standing and recumbent pressures in clinical trials—reduced chance of orthostatic hypotension

The combining of Eutonyl and Enduron in Eutron permits a significantly greater antihypertensive effect than with either agent used alone. This in turn may allow therapeutic success with lesser dosage—and correspondingly milder side effects.

A significant finding in clinical trials was the drug's action in lowering blood pressure to *nearly equal levels in all body positions.* Total average spread between standing and recumbent readings (after treatment) was only 7/4 mm. Hg.

Thus, in your moderate to severe cases, Eutron affords a usually smooth course of therapy, often with reduced likelihood of orthostatic effects. (The usual precautions against rising suddenly, of course, will always apply.) And, because of the thiazide component, Eutron may be used in the presence of congestive heart failure.



Once a day, every day

EUTRON™

PARGYLINE HYDROCHLORIDE 25 MG.
WITH METHYCLOTHIAZIDE 5 MG.

DAILY DOSAGE RANGE	Minimum	Usual starting	Intermediate	Maximum
	12.5 mg. pargyline hydrochloride and 2.5 mg. methyclothiazide	25 mg. pargyline hydrochloride and 5 mg. methyclothiazide	37.5 mg. pargyline hydrochloride and 7.5 mg. methyclothiazide	50 mg. pargyline hydrochloride and 10 mg. methyclothiazide

See Brief Summary on final page of advertisement.

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ENDURON | ENDURONYL

METHYCLOTHIAZIDE

Each tablet contains
Methyclothiazide 5 mg. with
Deserpidine 0.25 mg. or 0.5 mg.

Indications: Enduron is used to control edema and mild to moderate hypertension; also used with other drugs for hypertension. Enduronyl is used in mild to moderately severe hypertension; when used with Enduronyl, more potent agents can be given at reduced dosage to minimize undesirable side effects.

Contraindications: Neither Enduron nor Enduronyl should be used in severe renal disease (except nephrosis) or shutdown; in severe hepatic disease or impending hepatic coma; in patients sensitive to thiazides. Hepatic coma has been reported as a result of hypokalemia in patients receiving thiazides.

Enduronyl is contraindicated in patients with severe mental depression and suicidal tendencies, active peptic ulcer, or ulcerative colitis.

Warnings: Consider possible sensitivity reactions in patients with a history of allergy or asthma. If added potassium intake is indicated, dietary supplementation is recommended. Enteric-coated potassium tablets should be reserved for cautious use only when adequate dietary supplementation is not practical because those tablets may induce serious or fatal small bowel lesions consisting of stenosis with or without ulceration. These small bowel lesions have caused obstruction, hemorrhage and perforation frequently requiring surgery. Medication should be discontinued immediately if abdominal pain, distension, nausea, vomiting or GI bleeding occurs.

Precautions: Use thiazides with caution in severe renal dysfunction, impaired hepatic function, or progressive liver disease. In surgical patients, thiazides may reduce the response to vasopressors and increase the response to tubocurarine. Use thiazides with caution in pregnancy (bone marrow depression, thrombocytopenia, or altered carbohydrate metabolism have been reported in certain newborn infants). Also reported have been: blood dyscrasias including thrombocytopenia with purpura, agranulocytosis and aplastic anemia; elevations of BUN, serum uric acid, or blood sugar. Symptomatic gout may be induced. Antihypertensive response may be enhanced following sympathectomy.

Use Enduronyl with caution in patients with a history of peptic ulcer, as rauwolfias may increase gastric secretion. Discontinue at the first sign of mental depression. Rauwolfia alkaloids may increase hypotensive effects of surgery or anesthesia, and should be discontinued two weeks prior. They also lower the convulsive threshold and shorten seizure latency. In epilepsy, dosage adjustment of anticonvulsant medication may be necessary. Alcohol, barbiturates, or narcotics may potentiate action of deserpidine.

Adverse Reactions: During intensive or prolonged therapy, guard against hypochloremic alkalosis and hypokalemia (especially the latter if patient is on digitalis). All patients should be observed for signs of hyponatremia ("low-salt" syndrome). Reported thiazide reactions include: anorexia, nausea, vomiting, diarrhea, headache, skin rash, dizziness, paresthesia, weakness, photosensitivity, jaundice, and pancreatitis.

Reported rauwolfia reactions include: nasal stuffiness, nausea, weight gain, diarrhea, aggravation of peptic ulcer, epistaxis, skin eruption, and reduction of libido and potency. Excessive drowsiness, fatigue, weakness, and nightmares may signal early signs of mental depression.

EUTONYL | EUTRON™

PARGYLINE HYDROCHLORIDE

Each tablet contains
Pargyline Hydrochloride 25 mg.
with Methyclothiazide 5 mg.

Indications: For treatment of patients with moderate to severe hypertension, especially those with severe diastolic hypertension. Not recommended for patients with mild or labile hypertension amenable to therapy with sedatives and/or thiazide diuretics alone. It is desirable to establish the dosage of Eutron by administering component drugs separately.

Contraindications: Pheochromocytoma, advanced renal disease, increasing renal dysfunction, paranoid schizophrenia and hyperthyroidism. Hepatic coma has been reported as consequence of hypokalemia with thiazide therapy. Until further experience is gained not recommended for patients with malignant hypertension, children under 12, or pregnant patients.

Concomitant use of the following is contraindicated: other monoamine oxidase inhibitors; parenteral forms of reserpine or guanethidine; sympathomimetic drugs; foods high in tyramine such as cheese; imipramine and amitriptyline, or similar antidepressants; methyldopa. 2 week interval should separate therapy and use of these agents.

Methyclothiazide is contraindicated in patients with known sensitivity to thiazides.

Warnings: Pargyline hydrochloride is a monoamine oxidase inhibitor. Warn patients against eating cheese, and using alcohol, proprietary drugs or other medication without the knowledge of the physician. When indicated, alcohol, narcotics (meperidine should be avoided), antihistamines, barbiturates, chloral hydrate, and other hypnotics, sedatives, tranquilizers, or caffeine, may be used cautiously in reduced dosage. In emergency surgery ¼ to ⅓ the usual dose of narcotics, analgesics, and other premedications should be used avoiding parenteral administration where possible. Carefully adjust dose of anesthetics to response of patient. Withdraw pargyline two weeks before elective surgery.

Warn patients about the possibility of postural hypotension. Those with angina or coronary artery disease should not increase physical activity with an improvement in well being. Pargyline may lower blood sugar.

Avoid use of enteric-coated potassium tablets, as these may induce serious or fatal small-bowel lesions consisting of stenosis with or without ulceration. These small-bowel lesions have caused obstruction, hemorrhage and perforation frequently requiring surgery. Medication should be discontinued immediately if abdominal pain, distension, nausea, vomiting or GI bleeding occurs. These products contain no added potassium salts and if added potassium intake is desired, dietary supplementation is recommended. Coated potassium tablets should be reserved for cautious use when adequate dietary supplementation is impractical. In patients with a history of allergy or asthma the possibility of sensitivity reactions should be considered.

Precautions: Measure blood pressure while patient is standing to determine antihypertensive effect. Use with caution in hyperactive or hyperexcitable persons. Such persons may show increased restlessness and agitation. Withdraw drug during acute febrile illness. Watch patients with impaired renal function for increasing drug effects or elevation of BUN and other evidence of progressive renal failure; withdraw drug if such alterations persist and progress. Use with caution in patients with liver disease. As with all new drugs, complete blood counts, urinalyses, and liver function tests should be performed periodically. With prolonged therapy, examine patients for change in color perception, visual fields and fundi. Also reported have been: blood dyscrasias including thrombocytopenia with purpura, agranulocytosis and aplastic anemia; elevations of BUN, serum uric acid, or blood sugar. Symptomatic gout may be induced. In surgical patients thiazides may reduce response to vasopressors and increase response to tubocurarine.

Adverse Reactions: Pargyline may be associated with orthostatic hypotension. Mild constipation, slight edema, dry mouth, sweating, increased appetite, arthralgia, nausea and vomiting, headache, insomnia, difficulty in micturition, nightmares, impotence, delayed ejaculation, rash, and purpura have been encountered with pargyline. Hyperexcitability, increased neuromuscular activity (muscle twitching) and other extrapyramidal symptoms have been reported in a few patients with reduced cardiac reserve.

During intensive or prolonged therapy, guard against hypochloremic alkalosis and hypokalemia (especially the latter if patient is on digitalis). Observe all patients for signs of hyponatremia ("low salt" syndrome).

Reported thiazide reactions also include anorexia, nausea, vomiting, diarrhea, headache, dizziness, paresthesia, weakness, skin rash, photosensitivity, jaundice, and pancreatitis. Nocturia has been observed with the combination.

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The JOURNAL *of the Oklahoma State Medical Association*

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NEWS

Members of the Oklahoma State Medical Association, the constituent societies of the association, and all readers in general are invited to supply news items of general interest to the profession. Such copy should be received one month prior to the expected date of publication.

ADVERTISING

All advertising copy must be approved by the Editorial Board before acceptance for publication. Copy and/or engravings must reach the *Journal* office by the first of the month preceding the month of publication. General and miscellaneous advertising rates will be sent on request.

EDITING SERVICE

The Editorial Board reserves the prerogative to submit contributions to a Medical Editing Service when warranted. If such is felt necessary, the Editor will contact the author for approval, informing him that there will be a modest charge for this service.

REPRINTS

Authors will receive reprint order forms from the Transcript Press, P.O. Drawer 1058, Norman, Oklahoma 73069, prior to final publication of their articles. Other requests for reprints must be made to the Transcript Press within 30 days after publication.

"Keys to Becoming a Successful Doctor's Wife" is the 1967-1968 theme adopted at convention by our president, Mrs. George H. Miller, Tulsa. With this theme she presented us with four keys that will help unlock the doors to a successful year: Knowledge, Energy, Yielding, and Service.

Mrs. Miller has used these four keys herself to serve and promote the auxiliary and now she presents them to the membership as a challenge for the year.

The first door unlocked was one for the Annual Fall Conference. This meeting was held in the Venetian Room of the Skirvin Hotel, October 2nd, 1967. Mrs. Miller called the combined executive board meeting and conference to order following the registration and coffee.

The Chairman of the State Loan Fund Committee, Mrs. Milton L. Berg, Tulsa, submitted the following recommendations to the Executive Board concerning the Loan Fund Bylaws: (1) That in Article Two Section One of the By-Laws the following be deleted, "and the outgoing president shall become a member"; (2) That in Article Two Section Four the last sentence shall read, "In the event that the outgoing president is not available, the president of the auxiliary will assume the responsibility of chairman"; and (3) That Article Six Section Two be deleted. The recommendations were accepted by the executive board and will be presented at the annual meeting.

Guest speaker, Raymond F. Hain, M.D., Legislation Chairman, Oklahoma State Medical Association, was introduced by Mrs. Harlan Thomas, State Program Chairman.

"Blue Print for Legislative Effectiveness" was the title of the address by Doctor Hain. A great challenge was given to all members of the auxiliary to help their doctor husbands in the area of communications. He pointed out the difficulty of keeping abreast with bills effecting medicine because of the vast number presented. There were 77 bills passed in the last legislature. He urged the members of the auxiliary to attend the next session of the legislature.

Following adjournment of the meeting, members attended a luncheon and style show sponsored by the Oklahoma Clinical Society.

On October 8th-11th, Mrs. Miller, Mrs. Alfred T. Baker, Durant, President-Elect, and Mrs. Virgil Ray Forester, Oklahoma City, National Committee Chairman for Friendly Visitors Training, attended the National Fall Conference at the Drake Hotel, Chicago.

The Southern Region workshop will be held in Atlanta, Georgia, October 19th-20th and will be attended by the State President, President-Elect, Editor of the Sooner Physician's Wife, Mrs. William R. R. Loney, Sr., and the Chairmen of the following committees: AMA-ERF, Mrs. John Williams; Health Careers, Mrs. Arthur Springall; International Health, Mrs. John Kienzle; and Legislation, Mrs. Everette E. Cooke.

Each of these meetings should inspire and produce a wealth of information for our leaders who hold the keys to our success. □

REMEMBER OCTOBER 21st—22nd

"POLITICAL ACTION '68"

OMPAC Citizenship Conference

Skirvin Hotel **Oklahoma City**

Majority of Oklahoma Physicians Take Medicare Assignments. Recent figures from Aetna, Medicare carrier, indicate that 62 per cent of Medicare claims are by assignment. OSMA's House of Delegates said in 1966: "It is recommended that each member of the OSMA recognize that the acceptance of an assignment, even though it may be necessary in certain instances (welfare cases), places the third party between the physician and his patient . . . exercise of the option under Public Law 89-97 for the physician to render a statement to the patient directly and to assist him in applying to the government for whatever reimbursement might be due will minimize the third party element and will give maximum support to the concept that usual, customary and reasonable fees are best determined by the profession . . . "

Planning Committee Looks Toward New Income, Expanded Services and Facilities. The association's new Committee on Planning has initiated several studies designed to make the OSMA a more effective organization. At a meeting held September 17th, the following actions were taken: (1) To test the feasibility of the OSMA offering a microfilm service to members to enable the safe and convenient retention of inactive medical and financial records; (2) To strengthen the organization by re-activating a committee whose purpose would be to attain 100 per cent physician-enrolment in the OSMA; To study the need for expanding the association headquarters building, including the possibility of sharing space and specialized equipment with other health organizations, and to freeze OSMA savings funds for this purpose until feasibility can be analyzed; To undergo a management analysis to determine new methods for improved efficiency and expanded services; To establish long-range priority goals and gear the associations' wherewithal toward their accomplishment.

OSMA Resolution Is Studied by AMA and State Executives. A plan to inform members of the nation's state legislatures regarding health problems is underway by a group composed of AMA representatives and staff people from several state medical societies, including the OSMA. Spawned by a resolution introduced and passed by the OSMA at last June's AMA convention, the program would feature a nationwide AMA-sponsored conference designed to present medicine's story to several hundred state legislators and physicians from all fifty states.

Oklahoma Ranks 36th In Per Capita Income, But Leads Nation In Welfare Spending. Average per capita income for Oklahomans is only 83.54 per cent of the national average —36th in the nation—but state and local welfare expenditures are at the rate of $30.84 per $1,000 of personal income, the nation's highest. Per capita welfare costs are two and one-half times the national average.

MEETINGS

Oct. 17th—OSMA Regional Postgraduate Course, "Diabetes," Tradewinds Motor Hotel, Muskogee

Oct. 21st-22nd—OMPAC Conference, Skirvin Hotel, Oklahoma City

Oct. 26th—Oklahoma Northeast Health Forum, Western Hills Lodge, Wagoner

Nov. 26th-29th—AMA Clinical Convention, Houston, Texas

Feb. 2nd-3rd, 1968—OSMA Medicine and Religion Conference, Center for Christian Renewal, Oklahoma City

Feb. 5th-6th, 1968 — Oklahoma Chapter, American Academy General Practice, The Mayo Hotel, Tulsa

May 16th-18th, 1968—OSMA Annual Meeting, Skirvin Hotel, Oklahoma City

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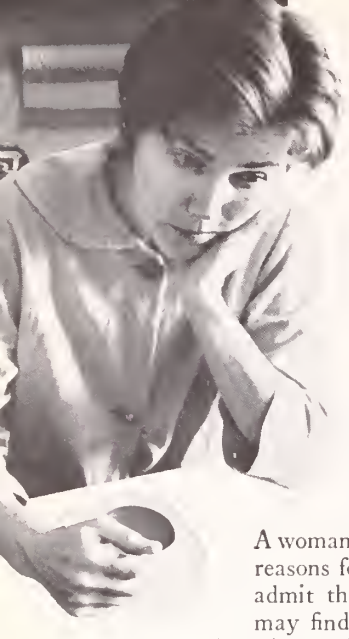
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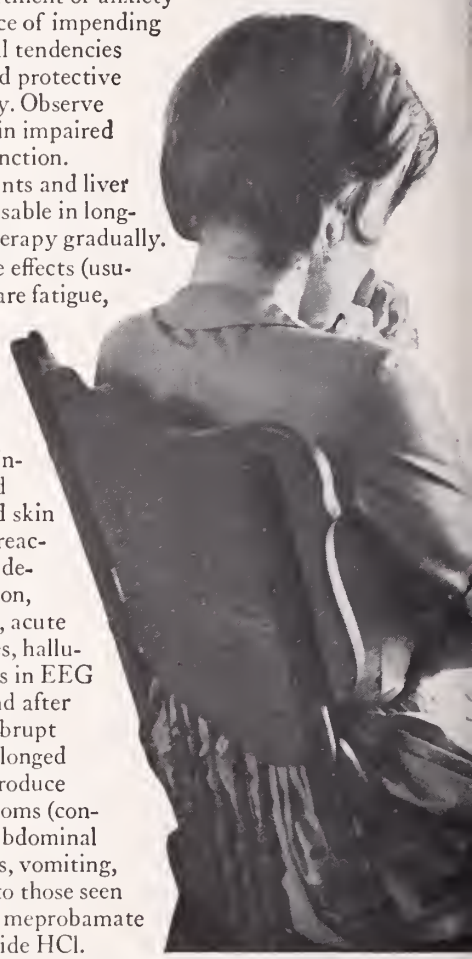


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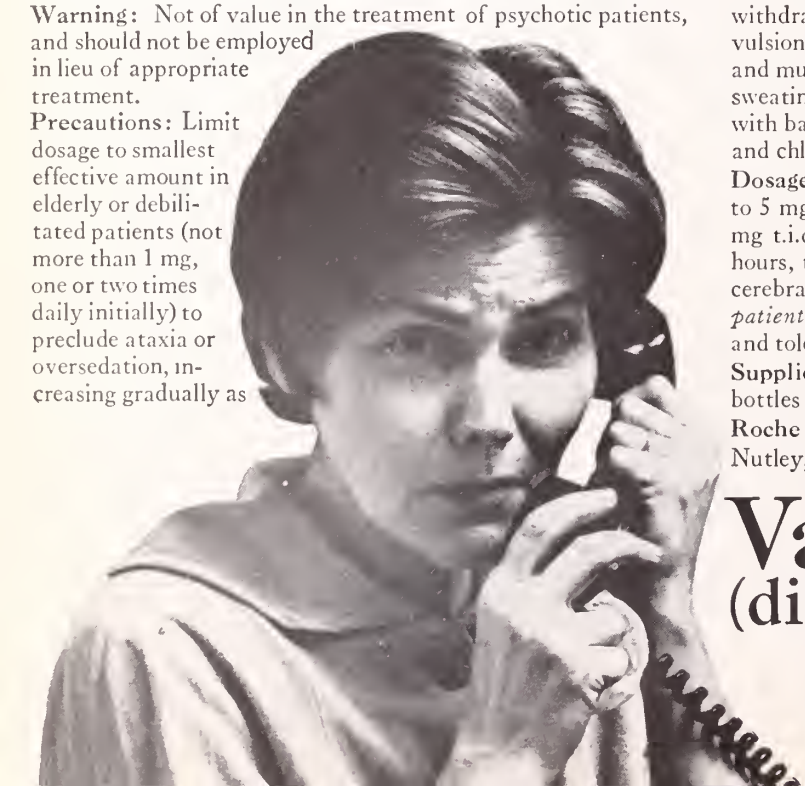


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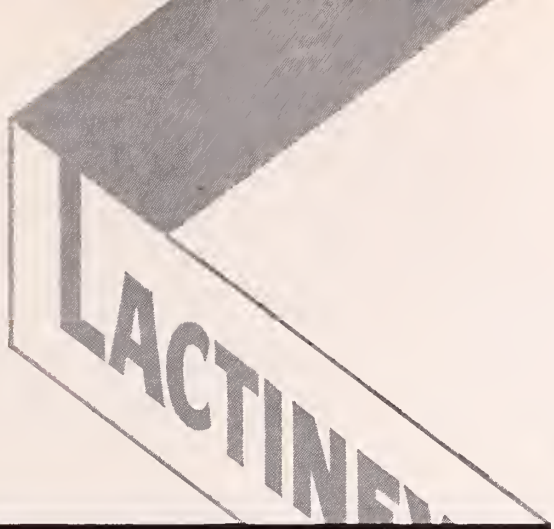
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DILANTIN is useful in the treatment of grand mal epilepsy and certain other convulsive states. Its use will prevent or greatly reduce the incidence and severity of convulsive seizures in a substantial percentage of epileptic patients, without the hypnotic and narcotizing effects of many anticonvulsant drugs.
PRECAUTIONS: Periodic examination of the blood is advisable. Nystagmus in combination with diplopia and ataxia indicates dosage should be reduced. The possibility of toxic effects during pregnancy has not been explored. ADVERSE REACTIONS: Allergic phenomena such as polyarthropathy, fever, skin eruptions, and acute generalized morbilliform eruptions with or without fever. Rarely, dermatitis goes on to exfoliation with hepatitis, and further dosage is contraindicated. Gingival hypertrophy, hirsutism, and excessive motor activity are occasionally encountered. During initial treatment, side effects may include gastric distress, nausea, weight loss, nervousness, sleeplessness, feeling of unsteadiness. Macrocytosis, megaloblastic anemia, leukopenia, granulocytopenia, thrombocytopenia, pancytopenia, agranulocytosis, and aplastic anemia have been reported. Nystagmus, lymphadenopathy, lupus erythematosus, erythema multiforme (Stevens-Johnson syndrome), and a syndrome resembling infectious mononucleosis with jaundice have occurred.
DILANTIN is supplied in several forms including Kapseals® containing 0.1 Gm. and 0.03 Gm. diphenylhydantoin sodium.
Parke, Davis & Company, Detroit, Michigan 48232

The color combinations of the banded capsules are Parke-Davis trademarks. The orange-banded white capsule identifies Parke-Davis 0.1 Gm. diphenylhydantoin sodium; the pink-banded white capsule 0.03 Gm. diphenylhydantoin sodium.

PARKE-DAVIS 015R67





LACTINEX®

TABLETS & GRANULES

■ **to help restore and stabilize the intestinal flora**

■ **for fever blisters and canker sores of herpetic origin**

LACTINEX contains both *Lactobacillus acidophilus* and *L. bulgaricus* in a standardized viable culture, with the naturally occurring metabolic products produced by these organisms.

First introduced to help restore the flora of the intestinal tract in infants and adults,[1, 2, 3, 4] LACTINEX has also been shown to be useful in the treatment of fever blisters and canker sores of herpetic origin.[5, 6, 7, 8]

No untoward side effects have been reported to date.

Literature on indications and dosage available on request.

References:

(1) Siver, R. H.: CMD, *21*:109, September 1954. (2) Frykman, H. H.: Minn. Med., *38*:19-27, January 1955. (3) McGivney, J.: Tex. State Jour. Med., *51*:16-18, January 1955. (4) Quehl, T. M.: Jour. of Florida Acad. Gen. Prac., *15*:15-16, October 1965. (5) Weekes, D. J.: N.Y. State Jour. Med., *58*:2672-2673, August 1958. (6) Weekes, D. J.: EENT Digest, *25*:47-59, December 1963. (7) Abbott, P. L.: Jour. Oral Surg., Anes., & Hosp. Dental Serv., 310-312, July 1961. (8) Rapoport, L. and Levine, W. I.: Oral Surg., Oral Med. & Oral Path., *20*:591-593, November 1965.

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BALTIMORE, MARYLAND 21201

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LX
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Diagnosis:

cystitis?
pyelonephritis?
pyelitis?
urethritis?
prostatitis?

in any case,
usually gram-negative*

Therapy:

two 500 mg. Caplets® q.i.c
(initial adult dose)

NegGram

Brand of

nalidixic acid

a specific anti-gram-negative

eradicates most urinary tract infections...

- Low incidence of untoward effects; no fungal overgrowth, crystalluria, ototoxic or nephrotoxic effects have been observed.
- "Excellent" or "good" response reported *in more than 2 out of 3* patients with either chronic or acute gram-negative infections.[1]

*As many as 9 out of 10 urinary tract infections are now caused by gram-negative organisms: E. coli, Klebsiella, Aerobacter, Proteus, Paracolon or Pseudomonas[2]... However, infections of the urethra and prostate caused by non-gonococcal gram-negative organisms are believed to be less prevalent.

Indications: Urinary tract infections caused by gram-negative and some gram-positive organisms.

Side effects: Mainly mild, transient gastrointestinal disturbances; in occasional instances, drowsiness, fatigue, pruritus, rash, urticaria, mild eosinophilia, reversible subjective visual disturbances (overbrightness of lights, change in visual color perception, difficulty in focusing, decrease in visual acuity and double vision), and reversible photosensitivity reactions. Marked overdosage, coupled with certain predisposing factors, has produced brief convulsions in a few patients.

Precautions: As with all new drugs, blood and liver function tests are advisable during prolonged treatment. **Pending further experience, like most chemotherapeutic agents, this drug should not be given in the first trimester of pregnancy. It must be used cautiously in patients with liver disease or severe impairment of kidney function.** Because photosensitivity reactions have occurred in a small number of cases, patients should be cautioned to avoid unnecessary exposure to direct sunlight while receiving NegGram, and if a reaction occurs, therapy should be discontinued. The dosage recommended for adults and children should not arbitrarily be doubled unless under the careful supervision of a physician. Bacterial resistance may develop.

When testing the urine for glucose in patients receiving NegGram, Clinistix® Reagent Strips or Tes-Tape® should be used since other reagents give a false-positive reaction.

Dosage: Adults: Four Gm. daily by mouth (2 Caplets® of 500 mg. four times daily) for one to two weeks. Thereafter, if prolonged treatment is indicated, the dosage may be reduced to two Gm. daily. Children may be given approximately *25 mg. per pound* of body weight per day, administered in divided doses. The dosage recommended above for adults and children should not arbitrarily be doubled unless under the careful supervision of a physician. Until further experience is gained, infants under 1 month should not be treated with the drug.

How supplied: Buff-colored, scored Caplets® of **500 mg. for adults,** conveniently available in bottles of 56 (sufficient for one full week of therapy) and in bottles of 1000. **250 mg. for children,** available in bottles of 56 and 1000.

References: (1) Based on 23 clinical papers, 1512 cases. Bibliography on request. (2) Bush, I. M., Orkin, L. A., and Winter, J. W., in Sylvester, J. C.: Antimicrobial Agents and Chemotherapy—1964, Ann Arbor, American Society for Microbiology, 1965, p. 722.

Winthrop

Winthrop Laboratories, New York, N. Y. 10016

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(Cover photo by Pan American)

Don't let monilia cut broad-spectrum therapy short...

start with Tetrex-F®

tetracycline phosphate complex-nystatin

Use of broad-spectrum antibiotics can cause fungal overgrowth in the alimentary tract... and give rise to symptoms so troublesome that therapy must be prematurely stopped. Tetrex-F (tetracycline phosphate complex-nystatin) helps you circumvent this problem.

The nystatin can prevent overgrowth of monilia; the phosphate complex delivers tetracycline to the blood rapidly. Side effects are infrequent.

High-Risk Patients

Tetrex-F (tetracycline phosphate complex-nystatin) is especially useful in patients most susceptible to fungal overgrowth during tetracycline therapy: (1) the elderly or debilitated, (2) young children, (3) the diabetic, (4) those on long-term tetracycline therapy, (5) those on steroid therapy, (6) those who have had moniliasis before, and (7) pregnant patients with a history of monilial vaginitis.

When you start with economical Tetrex-F (tetracycline phosphate complex-nystatin), you can complete the full course of broad-spectrum therapy with less chance of losing control elsewhere. A good start for a healthy finish.

PRESCRIBING INFORMATION. For complete information consult Official Package Circular. *Indications:* Infections of respiratory, gastrointestinal and genitourinary tracts and skin and soft tissues due to tetracycline-sensitive organisms, in patients with increased susceptibility to monilial infections. *Contraindications:* The drug is contraindicated in patients hypersensitive to its components. *Warnings:* Photodynamic reactions have been produced by tetracyclines. Natural and artificial sunlight should be avoided during therapy. Stop treatment if skin discomfort occurs. With renal impairment, systemic accumulation and hepatotoxicity may occur. In this situation, lower doses should be used. Tooth staining and enamel hypoplasia may be induced during tooth development (last trimester of pregnancy, neonatal period and childhood). *Precautions:* Bacterial superinfections may occur. Infants may develop increased intracranial pressure with bulging fontanels. In gonorrheal therapy, serologic tests for syphilis should be conducted initially and monthly for 3 months. *Adverse Reactions:* Glossitis, stomatitis, nausea, diarrhea, flatulence, proctitis, vaginitis, dermatitis, and allergic reactions may occur. *Usual Adult Dosage:* 1 capsule q.i.d. Continue for 10 days in Beta-hemolytic streptococcal infections. Administer one hour before or two hours after meals. *Supplied:* Capsules, bottles of 16 and 100. Each capsule contains tetracycline phosphate complex equivalent to 250 mg. tetracycline HCl activity and 250,000 units of nystatin. For Oral Suspension, 125 mg. tetracycline and 125,000 u. nystatin/5 ml., 60 ml. bottles.

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A Building Block approach to treating hypertension

With these three therapeutic building blocks you can create a once-a-day regimen to fit almost any degree of hypertension. See the following pages for details . . .



Consider starting your hypertensives on this basic thiazide

ABBOTT

A single daily dose of Enduron provides sodium excretion around the clock

Enduron is a true 24-hour single-dose thiazide. Its sodium excretion is not squeezed into an abrupt peak during the first several hours. It is well-sustained in a plateau-like effect—with little reduction for the first 12 hours, and decline thereafter only gradual.

Potassium loss, by contrast, is low. It reaches an early minor peak, then subsides rapidly. Moreover, since dosage is but once a day, there is but one daily peak of potassium loss. As with all thiazides, however, dietary potassium supplementation should also be considered, especially in long or intensive therapy.

Use Enduron as an ideal starting therapy in mild hypertension. Use it too, as a basic therapeutic building block with which other agents can be joined, for managing your more resistant hypertensives.

Once a day, every day

ENDURON®
METHYCLOTHIAZIDE



DAILY DOSAGE RANGE	Minimum	Usual	Intermediate	Maximum
	2.5 mg. tablet	5 mg. tablet	7.5 mg.	10 mg.

See Brief Summary on final page of advertisement.

To build added response, shift to Enduronyl

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The deserpidine component adds enhanced antihypertensive activity

The rauwolfia component of Enduronyl is deserpidine (Harmonyl®), a purified crystalline alkaloid supplied only by Abbott. It augments Enduron with its own antihypertensive and tranquilizing action.

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To add flexibility, Enduronyl comes in two strengths: regular and Forte. Both provide 5 mg. of Enduron. The variation is where most helpful: in the deserpidine. The tablets are scored, and give a surprisingly wide and economical choice of once-a-day doses (see below).

Choose Enduronyl for your patients in the broad range of mild to moderate hypertension. Patient acceptance is excellent!



Once a day, every day

ENDURONYL®

METHYCLOTHIAZIDE 5 MG. WITH DESERPIDINE 0.25 MG.

ENDURONYL FORTE

METHYCLOTHIAZIDE 5 MG. WITH DESERPIDINE 0.5 MG.

	Minimum	Usual	Intermediate	Maximum
DAILY DOSAGE RANGE	2.5 mg. methyclothiazide 0.125 mg. deserpidine	5 mg. methyclothiazide 0.25 mg. deserpidine	7.5 mg. methyclothiazide 0.375 mg. deserpidine	10 mg. methyclothiazide 0.5 mg. deserpidine
DAILY DOSAGE RANGE	2.5 mg. methyclothiazide 0.25 mg. deserpidine	5 mg. methyclothiazide 0.5 mg. deserpidine	7.5 mg. methyclothiazide 0.75 mg. deserpidine	10 mg. methyclothiazide 1 mg. deserpidine

See Brief Summary on final page of advertisement.

707075-R

Eutonyl affords a different kind of basic therapy for moderate to severe cases

ABBOTT

Effect tied to reduced peripheral vascular resistance; no central depressant action

Eutonyl is a unique nonhydrazine agent. It is reported to act by reducing peripheral vascular resistance.[1,2]

In clinical trials, significant reductions in mean blood pressure were seen in 84% of patients studied—all were moderate to severe cases. Eutonyl lowers diastolic in proportion to systolic, and in about half of the cases studied, reductions in the sitting and recumbent positions were nearly as great as in the standing position.

Most important: There is no central depressant action. In fact, some patients reported an *increased* sense of well being.

Here, then, is a highly effective *basic treatment* for moderate to severe cases—and one that will not hamper your patient with lethargy or drowsiness while on treatment.

Once a day, every day

EUTONYL®
PARGYLINE HYDROCHLORIDE



DAILY DOSAGE RANGE	Minimum	Usual starting	Intermediate	Maximum
	10 mg. tablet	25 mg. tablet	50 mg. tablet or as needed	200 mg.

1. Brest, A. N., et al., Cardiac and Renal Hemodynamic Response to Pargyline, Ann. N. Y. Acad. Sci., 107-1016, 1963.
2. Winsor, T., Pargyline Hydrochloride, Hypertension, Urinary Tryptamine, and Vascular Reflexes, Geriatrics, 19:598, Aug., 1964.

See Brief Summary on final page of advertisement.

Eutron adds thiazide for enhanced therapy with milder side effects

Only a 7/4 mm. span between standing and recumbent pressures in clinical trials—reduced chance of orthostatic hypotension

The combining of Eutonyl and Enduron in Eutron permits a significantly greater antihypertensive effect than with either agent used alone. This in turn may allow therapeutic success with lesser dosage—and correspondingly milder side effects.

A significant finding in clinical trials was the drug's action in lowering blood pressure to *nearly equal levels in all body positions.* Total average spread between standing and recumbent readings (after treatment) was only 7/4 mm. Hg.

Thus, in your moderate to severe cases, Eutron affords a usually smooth course of therapy, often with reduced likelihood of orthostatic effects. (The usual precautions against rising suddenly, of course, will always apply.) And, because of the thiazide component, Eutron may be used in the presence of congestive heart failure.



Once a day, every day

EUTRON™

PARGYLINE HYDROCHLORIDE 25 MG.
WITH METHYCLOTHIAZIDE 5 MG.

DAILY DOSAGE RANGE	Minimum	Usual starting	Intermediate	Maximum
	12.5 mg. pargyline hydrochloride and 2.5 mg. methyclothiazide	25 mg. pargyline hydrochloride and 5 mg. methyclothiazide	37.5 mg. pargyline hydrochloride and 7.5 mg. methyclothiazide	50 mg. pargyline hydrochloride and 10 mg. methyclothiazide

See Brief Summary on final page of advertisement.

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707075-R

ENDURON® | ENDURONYL®

METHYCLOTHIAZIDE

Each tablet contains
Methyclothiazide 5 mg. with
Deserpidine 0.25 mg. or 0.5 mg.

Indications: Enduron is used to control edema and mild to moderate hypertension; also used with other drugs for hypertension. Enduronyl is used in mild to moderately severe hypertension; when used with Enduronyl, more potent agents can be given at reduced dosage to minimize undesirable side effects.

Contraindications: Neither Enduron nor Enduronyl should be used in severe renal disease (except nephrosis) or shutdown; in severe hepatic disease or impending hepatic coma; in patients sensitive to thiazides. Hepatic coma has been reported as a result of hypokalemia in patients receiving thiazides.

Enduronyl is contraindicated in patients with severe mental depression and suicidal tendencies, active peptic ulcer, or ulcerative colitis.

Warnings: Consider possible sensitivity reactions in patients with a history of allergy or asthma. If added potassium intake is indicated, dietary supplementation is recommended. Enteric-coated potassium tablets should be reserved for cautious use only when adequate dietary supplementation is not practical because those tablets may induce serious or fatal small bowel lesions consisting of stenosis with or without ulceration. These small bowel lesions have caused obstruction, hemorrhage and perforation frequently requiring surgery. Medication should be discontinued immediately if abdominal pain, distension, nausea, vomiting or GI bleeding occurs.

Precautions: Use thiazides with caution in severe renal dysfunction, impaired hepatic function, or progressive liver disease. In surgical patients, thiazides may reduce the response to vasopressors and increase the response to tubocurarine. Use thiazides with caution in pregnancy (bone marrow depression, thrombocytopenia, or altered carbohydrate metabolism have been reported in certain newborn infants). Also reported have been: blood dyscrasias including thrombocytopenia with purpura, agranulocytosis and aplastic anemia; elevations of BUN, serum uric acid, or blood sugar. Symptomatic gout may be induced. Antihypertensive response may be enhanced following sympathectomy.

Use Enduronyl with caution in patients with a history of peptic ulcer, as rauwolfias may increase gastric secretion. Discontinue at the first sign of mental depression. Rauwolfia alkaloids may increase hypotensive effects of surgery or anesthesia, and should be discontinued two weeks prior. They also lower the convulsive threshold and shorten seizure latency. In epilepsy, dosage adjustment of anticonvulsant medication may be necessary. Alcohol, barbiturates, or narcotics may potentiate action of deserpidine.

Adverse Reactions: During intensive or prolonged therapy, guard against hypochloremic alkalosis and hypokalemia (especially the latter if patient is on digitalis). All patients should be observed for signs of hyponatremia ("low-salt" syndrome). Reported thiazide reactions include: anorexia, nausea, vomiting, diarrhea, headache, skin rash, dizziness, paresthesia, weakness, photosensitivity, jaundice, and pancreatitis.

Reported rauwolfia reactions include: nasal stuffiness, nausea, weight gain, diarrhea, aggravation of peptic ulcer, epistaxis, skin eruption, and reduction of libido and potency. Excessive drowsiness, fatigue, weakness, and nightmares may signal early signs of mental depression.

EUTONYL® | EUTRON™

PARGYLINE HYDROCHLORIDE

Each tablet contains
Pargyline Hydrochloride 25 mg.
with Methyclothiazide 5 mg.

Indications: For treatment of patients with moderate to severe hypertension, especially those with severe diastolic hypertension. Not recommended for patients with mild or labile hypertension amenable to therapy with sedatives and/or thiazide diuretics alone. It is desirable to establish the dosage of Eutron by administering component drugs separately.

Contraindications: Pheochromocytoma, advanced renal disease, increasing renal dysfunction, paranoid schizophrenia and hyperthyroidism. Hepatic coma has been reported as consequence of hypokalemia with thiazide therapy. Until further experience is gained not recommended for patients with malignant hypertension, children under 12, or pregnant patients.

Concomitant use of the following is contraindicated: other monoamine oxidase inhibitors; parenteral forms of reserpine or guanethidine; sympathomimetic drugs; foods high in tyramine such as cheese; imipramine and amitriptyline, or similar antidepressants; methyldopa. 2 week interval should separate therapy and use of these agents.

Methyclothiazide is contraindicated in patients with known sensitivity to thiazides.

Warnings: Pargyline hydrochloride is a monoamine oxidase inhibitor. Warn patients against eating cheese, and using alcohol, proprietary drugs or other medication without the knowledge of the physician. When indicated, alcohol, narcotics (meperidine should be avoided), antihistamines, barbiturates, chloral hydrate, and other hypnotics, sedatives, tranquilizers, or caffeine, may be used cautiously in reduced dosage. In emergency surgery ¼ to ⅓ the usual dose of narcotics, analgesics, and other premedications should be used avoiding parenteral administration where possible. Carefully adjust dose of anesthetics to response of patient. Withdraw pargyline two weeks before elective surgery.

Warn patients about the possibility of postural hypotension. Those with angina or coronary artery disease should not increase physical activity with an improvement in well being. Pargyline may lower blood sugar.

Avoid use of enteric-coated potassium tablets, as these may induce serious or fatal small-bowel lesions consisting of stenosis with or without ulceration. These small-bowel lesions have caused obstruction, hemorrhage and perforation frequently requiring surgery. Medication should be discontinued immediately if abdominal pain, distension, nausea, vomiting or GI bleeding occurs. These products contain no added potassium salts and if added potassium intake is desired, dietary supplementation is recommended. Coated potassium tablets should be reserved for cautious use when adequate dietary supplementation is impractical. In patients with a history of allergy or asthma the possibility of sensitivity reactions should be considered.

Precautions: Measure blood pressure while patient is standing to determine antihypertensive effect. Use with caution in hyperactive or hyperexcitable persons. Such persons may show increased restlessness and agitation. Withdraw drug during acute febrile illness. Watch patients with impaired renal function for increasing drug effects or elevation of BUN and other evidence of progressive renal failure; withdraw drug if such alterations persist and progress. Use with caution in patients with liver disease. As with all new drugs, complete blood counts, urinalyses, and liver function tests should be performed periodically. With prolonged therapy, examine patients for change in color perception, visual fields and fundi. Also reported have been: blood dyscrasias including thrombocytopenia with purpura, agranulocytosis and aplastic anemia; elevations of BUN, serum uric acid, or blood sugar. Symptomatic gout may be induced. In surgical patients thiazides may reduce response to vasopressors and increase response to tubocurarine.

Adverse Reactions: Pargyline may be associated with orthostatic hypotension. Mild constipation, slight edema, dry mouth, sweating, increased appetite, arthralgia, nausea and vomiting, headache, insomnia, difficulty in micturition, nightmares, impotence, delayed ejaculation, rash, and purpura have been encountered with pargyline. Hyperexcitability, increased neuromuscular activity (muscle twitching) and other extrapyramidal symptoms have been reported in a few patients with reduced cardiac reserve.

During intensive or prolonged therapy, guard against hypochloremic alkalosis and hypokalemia (especially the latter if patient is on digitalis). Observe all patients for signs of hyponatremia ("low salt" syndrome).

Reported thiazide reactions also include anorexia, nausea, vomiting, diarrhea, headache, dizziness, paresthesia, weakness, skin rash, photosensitivity, jaundice, and pancreatitis. Nocturia has been observed with the combination.

709075R

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DORSEY "FLU-GRAM"

DON'T BE LULLED BY RELATIVE LACK OF FLU LAST WINTER. THIS WINTER BE PREPARED: WHEN THE COMPLAINTS ARE COUGH AND CONGESTION, YOU CAN RELIEVE THESE SYMPTOMS WITH TUSSAGESIC TABLETS. ONE TIMED-RELEASE TABLET AT MORNING, MIDAFTERNOON AND BEDTIME BRINGS UP TO 24 HOURS' RELIEF FROM TROUBLESOME COUGH AND STUFFED AND RUNNY NOSE. TUSSAGESIC IS THE FAMOUS TRIAMINIC FORMULA, PLUS THREE OTHER PROVED CONSTITUENTS. MAKES PATIENTS MORE COMFORTABLE. FAST. ASK YOUR DORSEY REPRESENTATIVE FOR SUPPLY OF STARTER SAMPLES, OR IF FLU IS ALREADY EPIDEMIC, PHONE COLLECT. SEE BELOW.

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Tussagesic®

timed-release tablet contains:

Triaminic®	50 mg.
(phenylpropanolamine hydrochloride 25 mg., pheniramine maleate 12.5 mg., pyrilamine maleate 12.5 mg.)	
Dextromethorphan hydrobromide	30 mg.
Terpin hydrate	180 mg.
Acetaminophen	325 mg.

Dosage: Adults—1 tablet, swallowed whole to preserve timed-release feature, in morning, midafternoon and at bedtime. Side effects: Occasional drowsiness, blurred vision, cardiac palpitations, flushing, dizziness, nervousness or gastrointestinal upsets. Precautions: The patient should be advised not to drive a car or operate dangerous machinery if drowsiness occurs. Use with caution in patients with hypertension, heart disease, diabetes or thyrotoxicosis.

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a division of the Wander Company
Lincoln, Nebraska 68501

clip and file under "flu"

For relief of "flu-like" symptoms
Tussagesic timed-release tablets

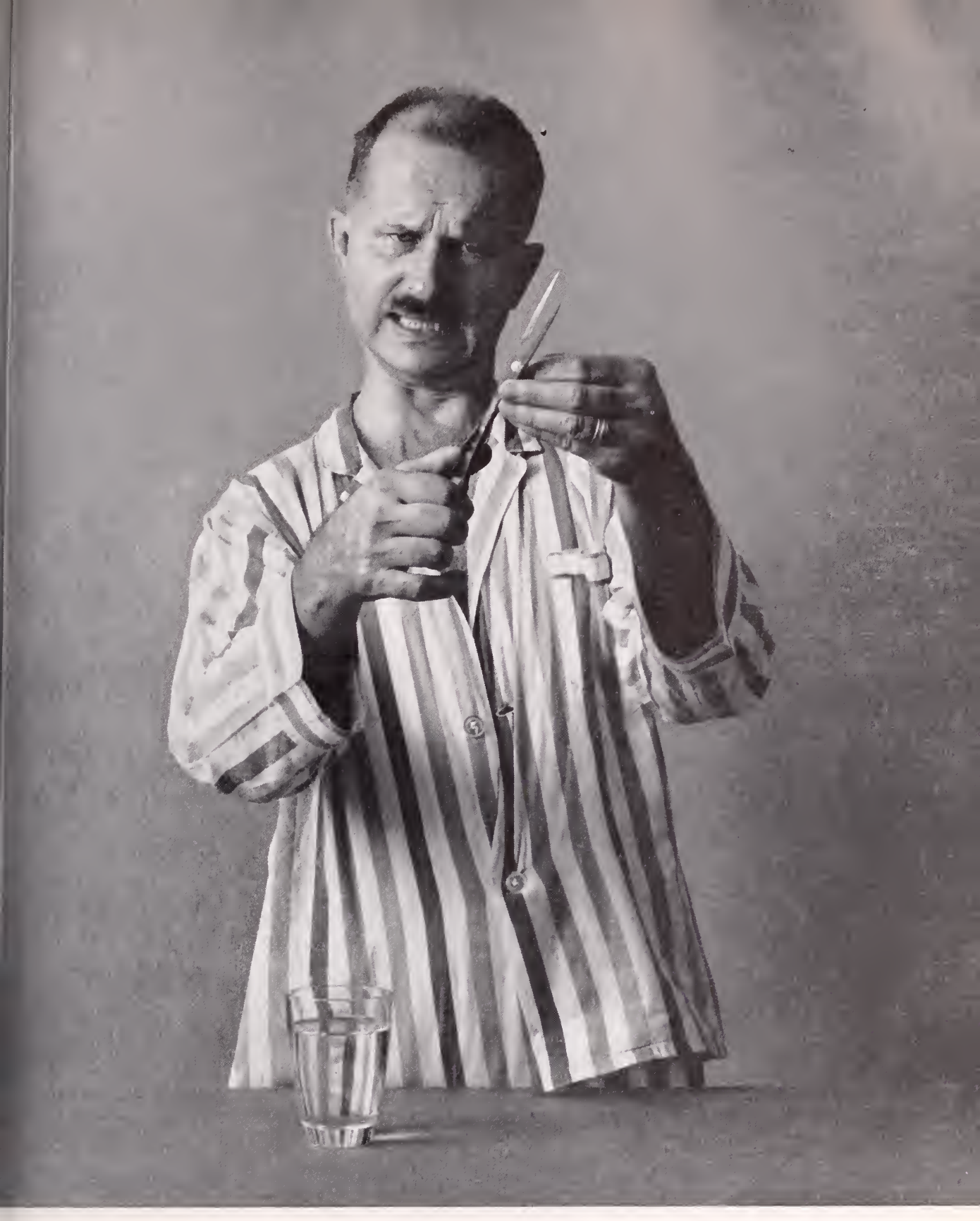
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Maybe you don't want
your patients to halve Hygroton®chlorthalidone.



Maybe your patients complain:
"Why don't they make a tablet I don't have to halve?"

Please see brief prescribing summary at the end of advertisement.



Maybe you abandoned Hygroton chlorthalidone
because there wasn't a convenient half strength.

ndications: Hypertension and many types of edema involving retention of salt and water.

Contraindications: Hypersensitivity and most cases of severe renal or hepatic disease.

Warning: With the administration of enteric-coated potassium supplements, which should be used only when adequate dietary supplementation is not practical, the possibility of small bowel lesions (obstruction, hemorrhage, and perforation) should be kept in mind. Surgery for these lesions has frequently been required and deaths have occurred. Discontinue enteric-coated potassium supplements immediately if abdominal pain, distention, nausea, vomiting, or gastrointestinal bleeding occur.

Use with caution in pregnant patients, since the drug may cross the placental barrier and adverse reactions which may occur in the adult (thrombocytopenia, hyperbilirubinemia, altered carbohydrate metabolism, etc.) are potential problems in the newborn.

Precautions: Antihypertensive therapy with Hygroton should always be initiated cautiously in postsympathectomy patients and in patients receiving ganglionic blocking agents or other potent antihypertensive drugs, or curare. Reduce dosage of concomitant antihypertensive agents by at least one-half. Barbiturates, narcotics or alcohol may potentiate hypotension. Because of the possibility of progression of renal damage, periodic determination of the BUN is indicated. Discontinue if the BUN rises or liver dysfunction is aggravated. Hepatic coma may be precipitated.

Electrolyte imbalance, sodium and/or potassium depletion may occur. If potassium depletion should occur during therapy, Hygroton should be discontinued and potassium supplements given, provided the patient does not have marked oliguria.

Take special care in cirrhosis or severe ischemic heart disease and in patients receiving corticosteroids, ACTH, or digitalis. Salt restriction is not recommended.

Adverse Reactions: Nausea, gastric irritation, vomiting, anorexia, constipation and cramping, dizziness, weakness, restlessness, hyperglycemia, hyperuricemia, headache, muscle cramps, orthostatic hypotension, aplastic anemia, leukopenia, thrombocytopenia, agranulocytosis, impotence, dysuria, transient myopia, skin rashes, urticaria, purpura, necrotizing angiitis, acute gout, and pancreatitis when epigastric pain or unexplained G.I. symptoms develop after prolonged administration. Other reactions reported with this class of compounds include: jaundice, xanthopsia, paresthesia, and photosensitization.

Average Dosage: One tablet with breakfast daily or every other day.

Availability: White, single-scored tablets of 100 mg. and aqua tablets of 50 mg., in bottles of 100 and 1000. (B)46-230-D

For full details, please see the complete prescribing information.

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When the agitated geriatric disrupts the home...

His teen-age granddaughter won't invite friends home because of his outbursts.



for moderate to severe anxiety

Mellaril®
(thioridazine)
25 mg. t.i.d.

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His disturbances at the table make every meal a nightmare.



His daughter can't please him. There is "just no living with him."

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When the agitated geriatric disrupts the home...

Anxiety that *seriously interferes* with the individual's performance at work, at home, or in the community may be regarded as *moderate to severe* in degree.

Mellaril often recommends itself to the treatment of moderate to severe anxiety because it

- helps control the most frequent symptoms: marked tension, agitation, apprehension, restlessness, hypermotility
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Contraindications: Severely depressed or comatose states from any cause, and in association with or following MAO inhibitors; severe hypertensive or hypotensive heart disease.

Precautions: Hypersensitivity reactions (e.g., leukopenia, agranulocytosis) and convulsive seizures are infrequent. Pigmentary retinopathy has been observed where doses in excess of those recommended were used for long periods of time. May potentiate central nervous system depressants, atropine, and phosphorus insecticides. Where complete mental alertness is required, administer the drug cautiously and increase dosage gradually. In addition, orthostatic hypotension (especially in female patients) has been observed. Epinephrine should be avoided in treatment of drug-induced hypotension.

Side Effects: Pseudoparkinsonism and other extrapyramidal disorders are infrequent; drowsiness, especially in high doses early in treatment, may occur; nocturnal confusion, dryness of the mouth, nasal stuffiness, headache, peripheral edema, lactation, galactorrhea, and inhibition of ejaculation are noted on occasion; photosensitivity and other allergic skin reactions may occur but are extremely rare.

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for moderate to severe anxiety

Mellaril®
(thioridazine)
25 mg. t.i.d.

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- CHRONIC BRONCHITIS
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The fast-disintegrating uncoated tablet gives relief in 15 minutes

Each tablet contains:

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Precautions: Usual for aminophylline-ephedrine-phenobarbital. Iodides may cause nausea, long use may cause goiter. Discontinue if symptoms of iodism develop.

Iodide contraindications: tuberculosis, pregnancy.

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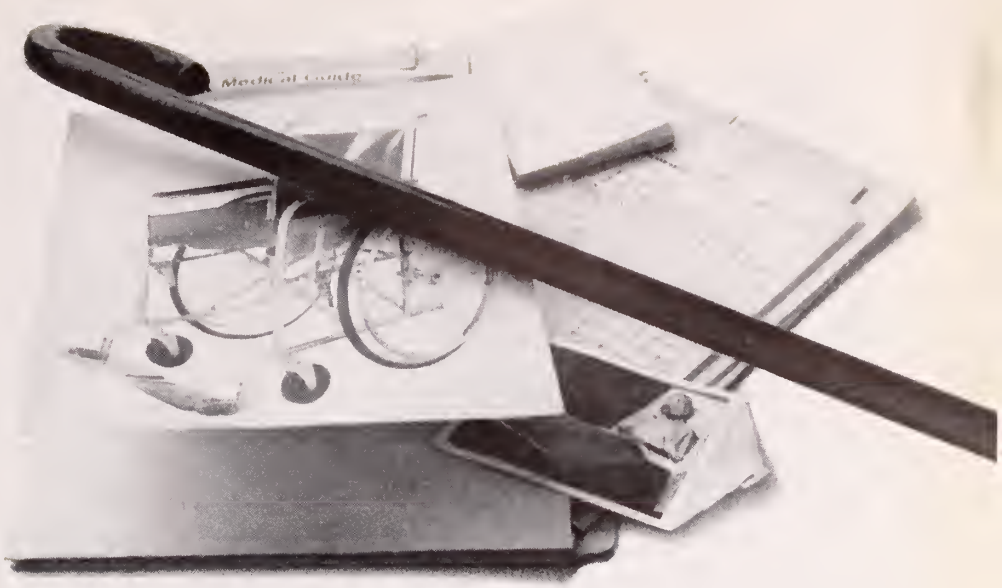
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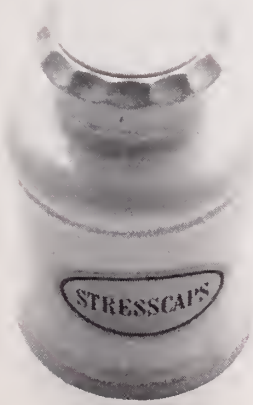
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Recommended intake: Adults, 1 capsule daily, for the treatment of vitamin deficiencies. Supplied in decorative "reminder" jars of 30 and 100; bottles of 500.

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End of An Era

ON TUESDAY, September 19th, 1967, The Farmers Union Hospital Association in Elk City, Oklahoma, by majority vote of the assembled stockholders, officially ended the Association's Health Insurance Program. Henceforth, any office space available in the hospital or clinic building will be leased outright to physicians desiring the space, and the practice of medicine will be strictly on a fee-for-service basis by the doctors. The hospital itself will continue to function, but will be wholly a community hospital with no contracts with the Association for care of its members.

The Elk City prepayment plan for medical care came into existence in 1929 under the direction of the colorful Doctor Michael Shadid, and was one of the earliest of such groups. It was a consumer cooperative program and at one time served as many as 1,600 families in the Elk City area, a family paying a membership fee of $100.00 plus annual dues of $18.00 to $40.00, depending on the size of the family. Hospital care was offered to subscribers of the plan at a discount.

The doctors were on salary, and at one time there were as many as seven doctors working full time in the hospital-clinic setup. The plan thus met with considerable opposition by organized medicine in Beckham County, finally resulting in a "restraint of trade" suit against the Medical Society which was settled out of court in 1952.

Mr. Pat Wall, the Secretary of the Farmers Union Hospital Association, states that the aim now is to continue operation of the Elk City Community Hospital as an up-to-date institution serving the area needs for all physicians and patients. The reasons for the demise of this particular Plan are varied, but Mr. Wall feels the impact of Medicare was probably the most telling in outdating it.

Thus, of over a hundred such rural health cooperatives in existence only a few years ago, nearly all west of the Mississippi, there is only a handfull still active. The Elk City promotion was certainly one of the most controversial, albeit still one of the best known in the land.—*Walter E. Brown, M.D.* □

Family Limit - Three Children

WITH THE PASSAGE of legislation now before the Indian Government 46,000,000 Hindu men will have to be sterilized. The purpose of this law is to limit every family to no more than three children and its proponents hope to put it into action by 1969.

The penalty for failure to comply with the proposed law includes higher taxes for large families, no free education for the fourth child, no free medical care and no family housing loans. Working women will not be permitted maternity leave after their third child.

When a government controls housing, medical care and education, the mechanics for any other kind of control are well established. The facts that India is far away and its problems seem foreign to those in the United States do not alter the historical observation that revolutionary trends are likely to begin in populous areas and if the original group survives the concepts may spread to other societies.—*C. B. Dawson, M.D.* □

School Health Education Study

THE FIRST education curriculum designed to provide students with the knowledge and guidelines to make informed and mature decisions regarding their health is getting its introduction this fall in the nation's schools.

It is the result of an intensive six-year study, the School Health Education Study (SHES), a national independent group of recognized authorities in medicine, health and education.

The program is said to be the first comprehensive 12-year sequence in health education for U.S. schools, without precedence in its scope, organization, and approach. It develops an important, long neglected subject area according to research and modern curriculum procedures and contains a newly

coordinated body of knowledge and methods of teaching.

Details of the health education sequence are set forth in the basic document, "Health Education, A Conceptual Approach to Curriculum Design," published in May, 1967, by 3M Company. This hardbound, illustrated reference book is designed as a working tool for school administrators, curriculum directors, grade and secondary school teachers, school nurses, administrators, teachers in college and university schools of education, medical and dental personnel, and those working in public and voluntary health agencies.

Doctor Herman E. Hilleboe, Delamar Professor of Public Health Practice, Columbia University, and chairman of the SHES Advisory Committee, said it will help in correcting glaring deficiencies in U.S. school health education programs and appalling misconceptions and superstitions existing among students.

SHES director Doctor Elena M. Sliepcevich, recognized authority in health education, pointed out that "scientific and medical research is daily feeding new information into our lives. It has become critical that we develop some rationale concerning it and provide our youngsters with the basis for informed mature decision-making. We must overcome circumstances which have led, for example, to billions of dollars being harmfully dissipated on quackery in this country."

The new health education course will blend some 40 major topics into a single unified subject for kindergarten through grade 12. Keyed to preparing students for full-living as mature individuals and responsible members of family, national, and international societies, its conceptual focus is on what a person should know, understand, feel, and do about health.

The program reflects the most current scientific content and new advances in methodology. The content is developed from the physical, biological and medical sciences. The methodology has its roots in psychology, sociology, and anthropology.

The SHES plan organizes teaching topics into an orderly progression through grade levels. A framework of ten major organizing concepts, growing from three key concepts, provides a realistic teaching-learning experience.

The three key concepts, which reflect a realistic and total definition of health as a combination of physical, mental, and social dimensions, are (1) growing and developing, (2) interacting, and (3) decision-making. Within these wide boundaries, the new health education sequence includes consideration of use and abuse of the wide range of mood and behavior modifying substances; the predictability and uniqueness of growth and development; the structure and functioning of the individual; individual, family, and international responsibilities for health; environmental hazards and accidents; man, disease, and environment; family life education; personal health practices such as dental health; the use of health information, products, and services; and food selection and eating patterns.

Publication of the full program is under way. To be completed by 1971, publication will include some 254 titles (ten teaching-learning guides, 40 student reference books, four textbooks, 200 visual packets for overhead projection, and other special materials), readied at regular intervals over the four years.

According to Doctor Sliepcevich, this four-year publishing schedule will facilitate the practical introduction of a correlated health curriculum into school systems by introducing two or three of the ten organizing concepts on a gradual basis. The program is flexible and adaptable to individual needs and varying community differences.

Available currently are 12 correlated visual packets for overhead projection use in classrooms covering a part of the curriculum, and teaching-learning guides for two of the curriculum's ten major organizing elements or concepts. These materials have been tested in 23 schools participating in the curriculum development in four tryout centers across the nation.

Extensive bibliographies, to accompany every phase of the forthcoming titles, will contain special references to student-oriented pamphlets, periodicals, books, and audio-visual materials, thereby utilizing the most recent advances in American teaching methods. □



About one year ago it became obvious that the Oklahoma legislature was in a mood to pass some sort of regulatory law governing the operation of medical laboratories. No control to insure quality work in all laboratories existed and it was alleged that poor work by some laboratories was jeopardizing the health of our people. Several groups of laboratory technicians were attempting to write a bill and they had expected passage by January of this year. However, not all the people concerned in laboratory services had been consulted prior to drafting the bill and therefore it contained many flaws. Doctor Dan Keller and Mr. Dwight Whelan attended one of the early meetings of the technician group and, partly through their urging, an interorganizational group came into being, encompassing all of the five technologist groups as well as the Oklahoma Medical Association, the Oklahoma Osteopathic Association, the State Health Department, the Oklahoma Hospital Association and the Oklahoma Association of Pathologists.

After hundreds of hours of work, led by Doctor Raymond F. Hain, a bill was finally written by the representatives of the above groups which promises to be equitable and to stand the test of time. Since laboratory work is engaged in by both physicians and technologists, a problem of "double licensure" arose and in the minds of some is still an issue. However, we feel that the bill as now written meets most objections in this area.

At its July meeting your Board of Trustees approved and endorsed the proposed "Oklahoma Medical Laboratory Licensure Act." Following this, it was again re-written to meet some questions of constitutionality which arose. Finally, the Board of Trustees re-affirmed its approval at the October 8th meeting and the bill has now been presented to and tentatively approved by the Legislative Council Health and Welfare Committee headed by Senator Ralph Graves, (D) Shawnee.

I solicit your active support of this proposed legislation. It is an opportunity for us as physicians to demonstrate to the public our sincerity in our attempts to insure quality medicine for all the people of Oklahoma. □

Maxwell A. Johnson MD

OSMA JOURNAL/special

Professional Corporations Upheld, U.S. Treasury Regulations Declared Void

JOHN K. SPECK, LL.B.

In the first court decision involving a professional corporation under the new treasury regulations, a Federal District Judge in Denver holds the corporation valid and the regulations void.

ON AUGUST 31st, 1967, U.S. District Judge Chilson of Colorado held that the new U.S. Treasury Regulations (which would deny the effectiveness of Professional Corporations) "constitute the exercise of a non-delegable function and are invalid and unenforceable," (Empey v. U.S., ___ Fed Supp. ___), and upheld a professional corporation formed by four Denver attorneys.

Judge Chilson's momentous decision involved the first recorded case specifically striking down another futile but unrelenting attempt of the Internal Revenue Service to prevent professional men from practicing in corporate form. This Treasury effort culminated on February 2nd, 1965, when T.D. 6797 approved new regulations (Sec. 301. 7701-1 and Sec. 301.7701-2) intended to completely nullify the laws of some 34 states enacted or implemented since 1960 permitting the formation and operation of professional corporations by physicians, attorneys, architects and other professions.

The government, of course, may appeal the Empey decision as a right of law; however, it has not won a single Court decision denying the right of a professional group to operate as an "association" taxable as a corporation for federal income tax purposes. As a matter of fact, the Treasury, in this area, has written a vacillating, irresolute, wavering record over a period of 30 years in the face of the fact that Congress has not changed the statutory definition of a "corporation" in the Federal Revenue Code since 1918 (only one year short of a half century).

A basic error of the Treasury, as recognized by Judge Chilson, is its violation of the fundamental division of powers in the Constitution of the United States between the legislative, executive and judicial departments of government. The Judge states, with respect to the 1965 Amended Regulations of the Treasury, that "the regulations constitute the exercise of a non-delegable legislative function *and are invalid and unenforceable.*"

The Court cited two United States decisions and one from the Tenth Circuit Court of Appeals (which embraces the states of Colorado, Wyoming, Utah, Kansas, New Mexico and Oklahoma), *U.S. v. Zion's Savings and Loan Association*, 313 F2d 331 (CA 10, 1963), which cases follow a long line of federal cases among the earliest of which was decided in 1924 in *Lynch v. Tilden Produce Co.*, 265 U.S. 315, 44 S.Ct. 588,

66 Law Ed. 1034, where the Court struck down a published regulation of the Treasury Department which there, as here, attempted to go beyond the plain provisions of the law enacted by Congress. The Court succinctly stated, "Congress has not delegated power or authority to make such a regulation—it grants no power to add to or take from the statutory definition . . . ," and in another case wherein the United States Supreme Court was confronted squarely with the limits to which the Treasury Department can go in the issuance of regulations, the Court stated as follows:

> "The power of an administrative officer or board to administer a federal statute and to prescribe rules and regulations to that end is not the power to make law—for no such power can be delegated by Congress—but the power to adopt regulations to carry into effect the will of Congress as expressed by the statute. A regulation which does not do this, but operates to create a rule out of harmony with the statute, is a mere nullity."
> (*Manhattan General Equipment Co. v. Comm.*, 297 U.S. 129, 56 S.Ct. 397, 80 L.Ed. 528.)

As a matter of fact, the Treasury Department has not only attempted to redefine the term "corporation" (admittedly a legislative and not an administrative function), but it has completely reversed its position from that taken over 40 years ago. Then it successfully taxed a small medical clinic, with only three practicing physicians operating under a trust agreement as "an association taxable as a corporation" for the calendar years 1924 through 1927, inclusive (*Pelton, et al., v. Comm.*, 82 F.2d 473). There, three physicians, two specializing in surgery and one in internal medicine, occupying offices with a common waiting room and sharing office expenses, though they were not partners and though they had not previously been partners, on September 1st, 1920, entered into a trust indenture whereby they transferred to themselves, as trustees, the office furniture, equipment, instruments, laboratory and X-ray equipment; authorized the trustees to use the properties conveyed to operate clinics and any professional pursuit allied therewith; to retain any professional assistants necessary, and to incur indebtedness and invest and reinvest in securities. These physicians each were paid salaries, as trustees, not in excess of $25,000.00 per year; they had power to divide their duties, to assume appropriate titles and were not to be liable in a personal capacity for the duties performed by them. Vacancies among the trustees were to be filled by the beneficiaries (the physicians themselves) and the holders of 50 per cent or more of such beneficial interests (which interests were represented by shares which were transferable) had power to modify the trust. During the taxable year involved, the participating physicians were the sole beneficiaries; however, they employed at least one physician for one year and three during the last two years involved.

The Pelton case was the first and last reported case involving an unincorporated medical clinic in which taxability, as a corporation, arose until the case of *U.S. v. Kintner*, 216 F(2d) 418, decided by the U.S. Ninth Circuit Court of Appeals, October 14th, 1954. During this entire interim between the Pelton and Kintner decisions, the statutory definition of a corporation had not changed. Here again, in Kintner, the question involved was whether this unincorporated association of physicians, under similar articles of association, though more formal and detailed and having more physician members than in Pelton, nevertheless was essentially similar to Pelton. Its articles provided for qualified limited liability, central management by an executive committee, membership to pass to association at death in exchange for his benefits under the adopted pension plan, and termination upon death of the last member. The court similarly held the Association to be taxable as a corporation under the Internal Revenue Code. Montana law, like that of Illinois in

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John K. Speck received his LL.B. degree from Oklahoma City University College of Law in 1941. He is author of the Oklahoma State Tax System and various tax and business articles in bar and accounting publications. Mr. Speck is now a senior associate with the law firm of Speck, Fleig, Hewett and Philbin in Oklahoma City.

the Pelton case, did not authorize the practice of medicine in corporate form. In this case, the taxpayer was claiming himself to be such a corporation while the Treasury Department claimed the exact opposite, *i.e.*, that it was a partnership and hence the physicians, being partners and not employees, were not eligible to share in the pension plan instituted by the Association.

In many other cases the Treasury Department had theretofore successfully taxed unincorporated associations, trusts, syndicates and other similar organizations which were "exercising the privilege of doing business as associations at the common law."

Morrissey, et al. v. Comm., 296 U.S. 344, 80 L.Ed. 263, 56 S.Ct. 289;
Swanson, et al. v. Comm., 296 U.S. 362, 80 L.Ed. 273, 56 S.Ct. 283;
Helv. v. Coleman-Gilbert Associates, 296 U.S. 278, 80 L.Ed. 278, 56 S.Ct. 285;
Hecht, et al. v. Malley, et al., 265 U.S. 144, 68 L.Ed. 949, 44 S.Ct. 462;
Helv. v. Combs, et al., 296 U.S. 365, 80 L.Ed. 275, 56 S.Ct. 287;
Burk-Waggoner Oil Ass'n v. Hopkins, 269 U.S. 110, 70 L.Ed. 183, 46 S.Ct. 48.

What caused the reversal in the attitude of the Treasury Department between the Pelton and Kintner decisions?

The author suggests that the sole reason for such a change in attitude was because the Kintner association had adopted a retirement plan for its physician members, thus placing them in a position analogous to that of the stockholding officers and directors of other non-professional associations (taxable under the federal law as corporations) fully entitled to and eligible for the provisions of such retirement plan or plans as are similarly available to associate-employees in any other field of endeavor. This is evident because there had been no change in the federal law itself, nor in any court decisions in all the years between the origin of the Pelton case and the decision in the Kintner case.

The Kintner case was followed by that of *Galt v. U.S.*, 175 F. Supp. 360, involving a physician-member of the Southwest Clinic Association, composed of a number of doctors, under an unincorporated association agreement similar in many respects to that involved in the Kintner Association. Texas laws, like those of Montana and Illinois, did not authorize practice of medicine in corporate form. Federal District Judge Davidson, however, held that Doctor Galt was a member of an association "entitled to be treated for tax purposes as though it was a corporation . . ."

Because of the Kintner decision, followed by the Galt decision in 1959, the author submits that the Treasury Department became alarmed at the possibility of this type of unincorporated organization being used more and more throughout the United States, thus making it possible for physician-owners of clinics to become eligible for all the fringe benefits, including pension and profit-sharing plans, available to stockholding officers and employees of other commercial or business associations and corporations, and that, because of this fear, the Treasury Department announced that it would not follow the Kintner decision (Re. Rul. 56-23, 1956-1; Cum. Bull. 598). Following this pattern then "in 1960, following the Galt decision, the Treasury adopted regulations designed to offset the effect of the Kintner and Galt cases and to make it difficult as possible for unincorporated organizations to be taxable as corporations . . ." so stated Judge Chilton in the Empey decision.

An effect of the 1960 regulations which applied only to unincorporated associations, trusts, etc. was such that, one by one, a number of states (until the total had grown to some 34) began adopting statutes permitting professional men to form either "associations" or "corporations," which enabled organizations formed thereunder to avoid the effect of the so-called Kintner regulations (1960) and thus allowing professional men incorporating thereafter to obtain the same fringe benefits as that of their patients or clients in the business world. Oklahoma adopted such a Professional Corporation Act in 1961—18 O.S. Secs. 801-819, inclusive. Such Act is available to physicians, architects, dentists, attorneys, and certain other designated professions.

Until the Empey case there was only one other written decision after the Galt case involving an unincorporated association, *i.e.*,

the Boulevard Orthopedic Association, formed by two physicians in Miami, Florida. Federal District Judge Choate held that the Association was taxable as a corporation following Pelton, Kintner and Galt (*Foreman v. U.S.*, 232 F. Supp. 272), decided April 2nd, 1964.

During the period of time between the Kintner Regulations (1960) and the decision in the Foreman case, the Treasury Department had proposed some further restrictive regulations and because of numerous protests filed thereagainst, held hearings for three days in Washington, D.C. in March, 1964. Thereafter in 1965, it issued new regulations, Secs. 301, 7701-1 and 7701-2(a) which in substance was intended to, and until the Empey decision effectively, did nullify the effect of the legislation adopted by two-thirds of the states which authorized professional men to practice in corporate form.

The Empey case, following as it did the Pelton, Kintner, Galt and Foreman cases, represents a sustained continuity of interpretation of the Congressional definition of the term "corporation" which has stood unchanged on the statute books since 1918. In the opinion of the author, Empey should settle the present law once and for all, *i.e.*, that professional men may incorporate in those 34 states, including Oklahoma, which specifically allow such incorporation and provided only that their incorporation is real and valid and that their practice is conducted within the framework of such law. □

OSMA REGIONAL POSTGRADUATE COURSE

"MANAGEMENT OF CORONARY ARTERY DISEASE"

TUESDAY, NOVEMBER 21st, 1967

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AFTERNOON SESSION

4:30 p.m. DIAGNOSIS OF CARDIAC ARRHYTHMIAS (ECG tracings will be supplied registrants)
Paul Houk, M.D.
John M. Kalbfleisch, M.D.

5:00 p.m. DIAGNOSIS AND MANAGEMENT OF CARDIAC ARRHYTHMIAS
Paul Houk, M.D.
John M. Kalbfleisch, M.D.

5:30 p.m. NEW CONCEPTS REGARDING MYOCARDIAL INFARCTION SHOCK
John Naughton, M.D.

EVENING SESSION

7:30 p.m. PROBLEMS IN CORONARY ARTERY DISEASE WITH CASE ILLUSTRATIONS
A. Coronary Care Unit
B. Anticoagulant Therapy
C. Cardiac Rehabilitation
Paul Houk, M.D.
John M. Kalbfleisch, M.D.
John Naughton, M.D.

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OSMA JOURNAL/scientific

The Practicing Physician and The Sexual Offender

JAMES L. MATHIS, M.D.

Sexual offenses are legal affairs, but the offender, his victim and his family and community are medical concerns. The physician's role in education, prevention and treatment is much the same as with the more organic disorders.

THE TERM "offender" implies apprehension for an illegal act. Standing alone, this might appear to have little to do with the physician, but the intimate association of sexual behavior with the basic personality makes it a medical problem in most cases. Even when the offense itself does not indicate serious psychopathology, the secondary effects of the arrest and its unfortunate publicity may be devastating.

The laws of Oklahoma forbid almost all sexual acts except genital union in private between two people of opposite sexes who are legally married. This probably means that the majority of adult Oklahomans have been liable for classification as sexual offenders at some time or another. Sexual deviations, although not always synonymous with sexual offenses, are recognized as medical entities by inclusion in the Diagnostic and Statistical Manual for Mental Disorders of the American Psychiatric Association. Thus, in most instances, we have the complicated situation of a recognized medical condition also being a legal entity further complicated by strong moral overtones. Therein lies the uniqueness of the situation.

Popular terminology which refers to sexual offenders as "sex maniacs," "fiends," "degenerates," and "sex criminals" implies that these are individuals completely different from other people and that they are unwilling or unable to control monstrous and destructive sexual appetites. The law tends to lump them into one unpleasant category and to demand more stringent controls and vengeful punishment for all under the guise of protecting society. This is no more reasonable than to lump all cases of pneumonia together and to assume that one treatment would be equally effective for each. This is totally unacceptable to the medical world and there is adequate evidence that it should be equally unacceptable to so consider the sexual difficulties.

The role of the practicing physician in the problem of the sexual offender can be divided for discussion purposes into three somewhat overlapping parts: (1) education and protection, (2) prevention, and (3) treatment. Let us consider them separately.

(1) *Education and Protection*

Education must begin first with the physician himself. It is unfortunate that few

physicians learned about the sexual offenses and deviations during their training years. This means that the practicing physician must take it upon himself to become familiar with the conditions before he can be of value to his patients and to society. Otherwise, he may accept as true the statement by the chief of the F.B.I. that "Peeping Toms" are a "sadistic menace."[1] His role as educator must be to give the facts to patients, friends and relatives, schools and organizations, and to legal authorities. The social and intellectual position of the physician ideally fit him for the task of allaying much of the hysteria and fear which sexual offenses create in a community.

Protection also infers two overlapping areas. For example, the physician may be in a position to help protect the wife and children of a man who has been apprehended for a sexual offense from much of the shock and emotional trauma which our society inflicts upon them. He frequently will be in a position to protect the object of a sexual offense from the ill effects which more often stem from the manner in which the family and community react than from the actual act itself. More about this later.

(2) *Prevention*

The deviant sexual behavior of adulthood invariably is rooted in an act or desire which was perfectly normal at some stage of infancy and/or childhood. The vestiges of infantile sexuality are always discernible in the act of the adult, so it is natural that preventive measures must concern themselves with the formative years. The physician should be the person who understands these formative years and who, by guidance and advice, helps parents see children through them safely. For example, the victims of transvestism, the sexual deviation of cross-dressing, frequently were encouraged or even forced to dress in the clothing of the opposite sex in childhood. A higher incidence of sexual difficulties are seen in adults who occupied a bed with the parents of the opposite sex beyond the very early years of infancy. The physician who detects and advises against these actions may be practicing excellent preventive medicine.

Prevention also implies protection of the victim of a sexual attack from future difficulties. This most commonly arises in relationship to pedophilia, sexual advances by an adult male toward an immature female. This rarely involves actual violence or an attempt at sexual intercourse, therefore, the harm is primarily emotional. The physician who sympathetically and understandingly cares for the child and the family determines much of how it will affect the child. When it is considered as simply an unfortunate bit of behavior by an "ill" man, without fanfare or hysteria, there is little evidence that the child is greatly damaged. Examinations and tests upon the child should be kept to a minimum, and it is extremely important to avoid communicating to the child that great harm has occurred. Again, this is good preventive medicine.

(3) *Treatment*

The physician may or may not decide to treat a sexual offender, but he should be able to evaluate him, to make suggestions to the authorities and to the patient, and to refer him when advisable. For example, he should know that a 35-year-old professional man who has had only one episode of exhibiting probably will not repeat it if he has a minimum of supportive guidance from any sympathetic and knowledgeable physician. On the contrary, the non-psychiatrist should be very wary of attempting to treat a 22-year-old man picked up for pedophilia. The latter offense indicates much greater psychopathology and is far more apt to be recurrent. Only the physician trained in prolonged and intensive psychotherapy should undertake to treat this pedophile.

All physicians should be prepared to think of the sexual offender as a man sick in relation to society, but also in his own basic personality. Some conditions dictate that this treatment include imprisonment to protect society from the patient and to protect

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the patient from himself. Imprisonment should be for protection, however, not for punishment or vengeance, since it has been shown that these are poor methods for curing an illness.

Now let us look at some of the most common sexual offenses in brief profile. They are, in rough order of frequency of arrests, exhibitionism, pedophilia, voyeurism, homosexuality, and transvestism.[2] The less common but more serious conditions such as rape and sadism, conditions which involve physical violence and bodily harm, will not be considered here. Female sexual offenses, because of their rarity, will be excluded.

Exhibitionism[3]

Exhibitionism, compulsive and inappropriate exposure of the genitalia, is the most frequent of the sexual offenses. It is no respecter of social status or occupation, and it is not an indicator of morality or of overt sexuality. Invariably it is the child-like method by which certain men respond to situations which produce anxiety and a lowering of the self-esteem. It is never intended as an invitation to sexual intercourse, and rarely, if ever, is it a step toward more severe forms of sexual offenses. The exhibitionist rarely touches the object of his act, and she is usually a stranger from whom he only expects some show of emotion.

The exhibitionist most frequently is a quiet and passive male who sees himself wholly inadequate in relationship to other men and at the mercy of most women. His act tends to be a compulsion over which he has no conscious control, even though he swears that it will never happen again after each offense. The fact that he is convinced that each time will be the last makes it very difficult for him to admit that he needs treatment. Some form of external pressure to overcome this massive mechanism of denial, either pressure from the legal authorities or from family members, frequently is essential before he can be helped. Psychiatric treatment in the form of group therapy appears to be beneficial.[4]

Pedophilia[5]

The pedophile is a man who seeks immature girls as his sexual objects. These will be little girls who are known to him as members of the family or as friends of the family in about 70 per cent of the cases.[6] He wishes to pet and to caress them, frequently upon the genitalia, or to have them touch his penis, but actual sexual intercourse is rarely attempted. When it does occur, it is almost invariably not pedophilia, but a symptom of a psychosis or organic brain damage.

Pedophilia is a regressive phenomenon. It occurs in a man who sees himself totally unable to relate sexually to an adult female for fear that she would be aware of his inadequacy. Since he sees himself sexually as a child, he feels comfortable in so relating to a child, and like a child, his sexuality consists mostly in seeing and feeling. He tends to rationalize his act as an educational experience for the child.

Pedophilia is most common in the late teens and early twenties and again in the early phases of old age. In the elderly, it primarily occurs in those men who are suffering from senility and/or organic brain damage, and in whom the pedophilia is simply one form of regression that is occurring throughout the personality. These men are not likely to repeat the act once detected and imprisonment is rarely indicated. On the contrary, pedophilia occurring in a man of 21 is far more apt to recur and forced treatment should be mandatory, with or without incarceration, depending on the facilities available and the motivation of the patient.

Voyeurism[7]

The voyeur, the Peeping Tom, wishes to observe surreptitiously a nude female or some part of the female body, with or without the sexual act being included in the scene. The normality of a certain amount of voyeurism is obvious to any adult male who has not repressed all of the memories of his adolescence. A degree of it remains in adulthood to support Bourbon Street and girlie magazines, but this lacks one of the ingredients of pathological voyeurism: that is, the true voyeur does not achieve his goal unless the act is forbidden.

The voyeur is not looking for a sexual contact *per se*, he only wishes to see. He, like the exhibitionist, is no real threat to anyone, but he is primarily a community nuisance. Not infrequently, the voyeur of early and middle teens becomes the exhibition-

ist of adulthood but rarely does the reverse occur.

The voyeur's early childhood usually contains an overabundance of exposure to nude females or to sexual scenes in the family. An example of this is a professional man whom I saw in consultation for very severe voyeurism. His father had died when he was five years old leaving him with a mother and a seven-year-old sister. He told of mother, daughter and son bathing and dressing together until he went to college. Another patient, a college professor, had spent much of his childhood putting clothes on an alcoholic mother with an obsession for disrobing when intoxicated.

Homosexuality[8]

The entity of homosexuality, choosing as love objects persons of the same sex, rarely becomes a medical problem in itself. However, the consequences of the act when it becomes a legal proposition and the social and personality pressures which go along with it, may come to the attention of the physician. Depressions and anxieties are very common in the patient and guilt and resentment are seen in family members. Treatment of these conditions is well within the medical province, but an attempt to change the sexual identification of the patient is rarely profitable. The homosexual seeks consultation primarily when he is in trouble, personally or legally.

Homosexuality is extremely variable in its manifestations, and the term probably should be restricted to those who indulge in overt sexual activity with members of the same sex. Passivity and a degree of feminine appearance and mannerisms do not assure the diagnosis of homosexuality any more than being a professional football linesman excludes it. It is probable that about five per cent of American males are overt homosexuals, and that most of them are unhappy men whose lives are oriented toward narcissicism and self-defeat.

Transvestism[9]

Transvestism, cross-dressing, occurs in both males and females, but the female rarely comes to medical or legal attention. A woman who wishes to wear a short hair cut and masculine shirt and pants is of no concern to society, but a man with a petite dress and cosmetics creates considerable consternation.

Male transvestism takes many forms, but the most common is that of a heterosexual man who finds some degree of cross-dressing to be an erotic stimulation for him. It varies from the man who achieves no sexual gratification until he has donned a full array of feminine clothing, to the man who merely wishes to see himself in some item of female clothing before he becomes aroused. Some transvestites are homosexual in orientation, but again, the physician rarely sees them for the basic sexual problem. The patient is most apt to come when he has anxieties arising from some disagreement with society or when his wife and/or other family members have become concerned.

Confusion sometimes arises over a group of individuals who have recently come into some prominence; the trans-sexuals.[10] The trans-sexual will always be a transvestite, but the reverse is not true. The average transvestite is quite aware of being a male, in fact he may be very pleased about it, but he finds part of his sexual urge tied up with the female image he creates by cross-dressing. The trans-sexual anatomically and genetically is male, but he is totally female in his psyche and he does not like any part of his maleness. His genitalia may be seen as gross deformities. He is not attracted to homosexual males, rather he is attracted to males as if he were a heterosexual female. This type of individual seeks only one thing from the physician—to have his anatomy adjusted to fit his psyche since the converse does not seem possible. The physician who wishes to help these people must become acquainted with the methods of assessment, diagnosis and treatment. The psychotic patient, the borderline in ego strength and/or intellect and the severely neurotic are poor candidates for any sort of sexual conversion, either surgical or chemical. Even those who meet the criteria for conversion must be assessed carefully and slowly in order to determine the strength of the motivation and to acquaint the patient with the pitfalls. The non-psychiatrist physician probably should make this decision with the help of a psychiatric consultation.

SUMMARY

A sexual deviation becomes a sexual offense when discovered by legal authorities. The act itself is a symptom of a more basic personality disorder which always involves some degree of sexual immaturity. A sexual offense is a medical problem not only for the offender, but for his family, community and the object of his offense. The physician should be involved in all of these areas.

The physician's role involves education, prevention and treatment; all factors which overlap and which may vary greatly with each separate case. Proper assessment and diagnosis is as important as in any other medical condition. □

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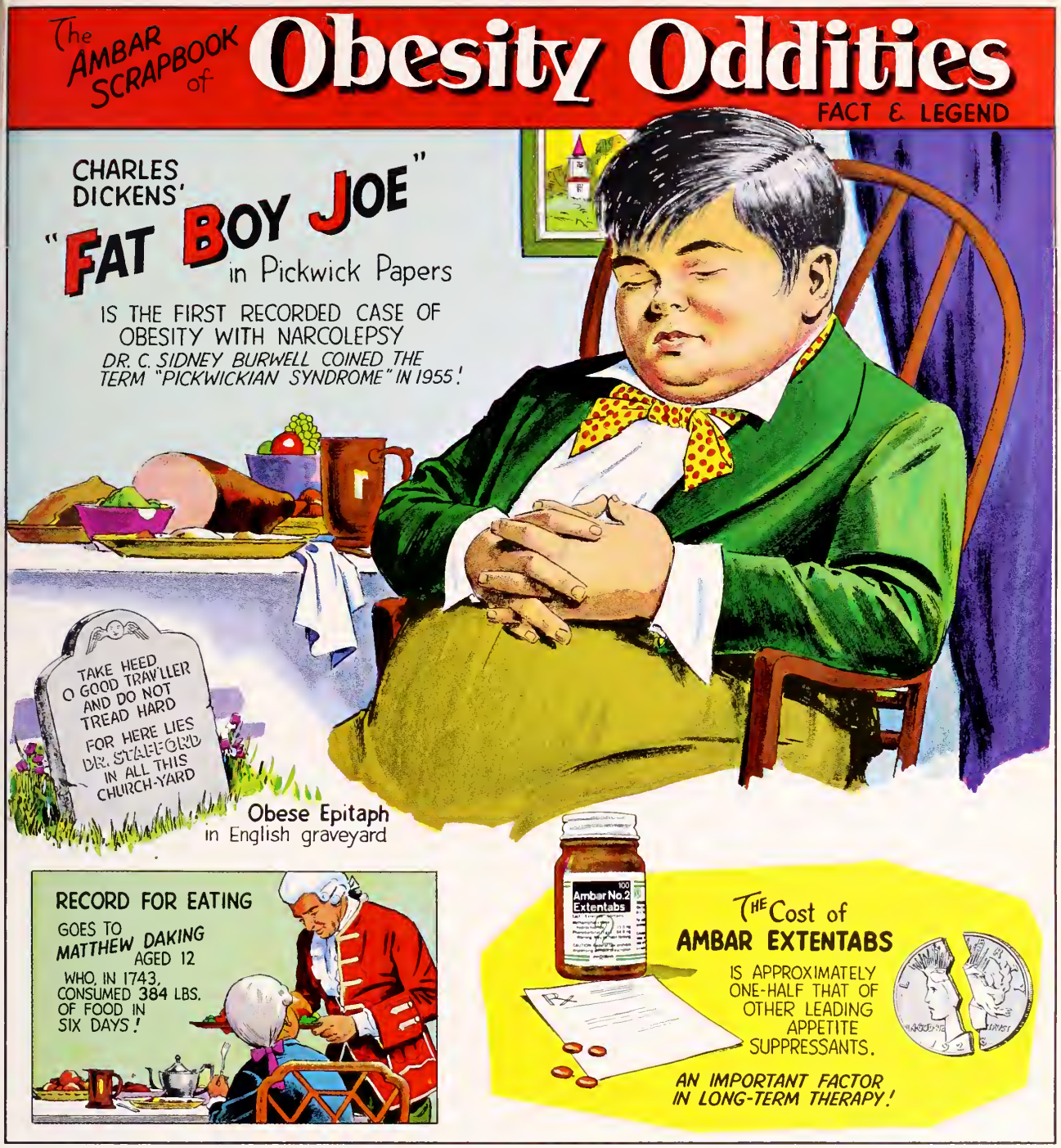
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Gonorrhea: Arthritis, Septicemia and Cutaneous Manifestations, A Case Report

B. CHARLES FRICHOT, III, M.D.
MARK ALLEN EVERETT, M.D.

An unusual case of gonorrhea involving the skin and producing arthritis is reported.

DESPITE MAJOR EFFORTS to eradicate the gonococcus from our society by enlightened epidemiological control, modern diagnostic methods and new antibiotics, this disease has continued to flourish.

Since the advent of penicillin, the number of cases of gonococcal arthritis has diminished strikingly. In 1945, Hench reported that the incidence of arthritis in patients with gonorrhea was 0.1 - 0.3 per cent. In a more recent study (1963), Goobar and Clark reported an incidence of 0.288 per cent; 83 per cent of the cases in women.[9] Although, the true incidence of gonorrhea is unknown, it is estimated conservatively that 1.5 million new cases occur annually in the United States. Therefore one may speculate that there are at least 4,500 cases of gonococcal arthritis each year in the United States, the majority presumably undiagnosed.

One patient with gonococcal arthritis was hospitalized recently at the University of Oklahoma Medical Center. A 33-year-old "bar maid" was admitted to University Hospitals March 8th, 1967. She had been in good health until seven days prior to admission when she developed a generalized "measles-like rash" that lasted only one day. The next day, chills and fever appeared and recurred daily about 8 p.m. Three to four days before admission she observed painful hemorrhagic areas on her left arm, knee and back. She also noted arthralgia in her back, neck and legs and swollen, tender hot left thumb and wrist joints. There was no history of urethral discharge or abdominal pain and her husband had noted no urethral discharge. There was no history of promiscuity.

Physical examination revealed a young woman in no distress. She was afebrile and had normal vital signs. Positive findings were limited to her skin, pelvis, and left wrist. There was a 1.0 cm. bulla on her left elbow, and two 0.4 cm. painful hemorrhagic pustules on the dorsum of her left forearm. There were similar lesions on the left knee, right side of the back, and a purpuric area on the left palm. The left wrist and thumb were swollen, tender and erythematous. Only limited motion was possible. Pelvic examination revealed tender adnexae but no urethral discharge.

The laboratory findings were largely within normal limits. The white blood count was 11,300/cu. cm. with 90 per cent neutrophils. Sedimentation rate was 49 mm./hr. Hemoglobin, hematocrit, platelet count, and morphology were within normal limits. Urinalysis revealed 15 to 25 white blood cells and two to five red blood cells per high power field but urine culture revealed

no growth. VDRL was non-reactive. The blood urea nitrogen, febrile agglutinins, stool guiac, uric acid and rheumatoid arthritis factor were all normal. Electrocardiogram and roentgenograms of the left wrist and chest were within normal limits. Blood and urethral cultures revealed no growth. The 0.4 cm. lesion in her left palm was biopsied and one-half of the specimen cultured. A pure culture of *Neisseria gonorrheae* grew out on chocolate agar when incubated in ten per cent CO_2 for 48 hours. Fermentation studies confirmed the finding of *Neisseria gonorrheae.*

On the day after admission, the patient was started on intravenous aqueous penicillin, 6.0 million units daily. The following day new hemorrhagic pustules appeared on the right elbow, the left foot, and a small petechial hemorrhage developed on the pad of the right ring finger. Her left ankle also became tender but there was no clinical evidence of arthritis. She remained relatively afebrile during the entire hospital stay, and improved symptomatically so that on the fifth day penicillin was changed to 1.2 million units every eight hours intramuscularly. By the sixth day the skin lesions had regressed considerably and the joints were asymptomatic with no evidene of arthritis. On the eighth day of therapy, the patient was so improved she left the hospital against medical advice.

COMMENT

Gonococcal septicemia produces two distinct clinical syndromes, one relatively benign, the other fulminant with frequently fatal endocarditis. The more common and less severe form of gonococcemia is illustrated by the patient in this report. If untreated, the characteristic clinical triad of fever, migratory arthritis, and skin lesions may persist for days or months.[2]

Many of the complications of gonorrhea, such as arthritis, gonococcemia and endocarditis, as well as perigenital lesions, often remain undiagnosed, largely because little attempt is made to recover the organism. The reason for failure in diagnosis is twofold: (1) A complication may occur so late



Figure 1. Hemorrhagic vesiculopustules. Septic gonococcal infarcts on right elbow.

that the underlying disease is not suspected and (2) it is a general belief that the gonococcus is difficult to recover and identify.[7]

The inability to diagnose gonorrhea in the female is another formidable obstacle in the control of this disease. The lack of efficient diagnostic procedures and the usual absence of symptoms in women, result in the female serving as a chronic reservoir of disease. Ordinarily smears and cultures are valueless, and the recently developed antibody technique has at least a 20 per cent incidence of false negative results.[4]

The diagnosis is made most often by a high index of suspicion and recognition of the clinical triad of fever, migratory arthritis, and skin lesions.

Fever—Temperature elevations are intermittent, irregular, and may be as high as 105° F. There is no typical febrile curve.

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Figure 2. Recent hemorrhagic bulla on patient's left elbow.

Febrile episodes, often accompanied by chills, parallel transient showers of gonococci in the blood.[2]

Arthritis—Gonococcal arthritis is usually abrupt in onset and is accompanied by all the signs of an intense inflammation involving periarticular tissues and synovial membranes. There are pain, redness, and tenderness with limitation of motion.[5] In a 1963 report of 14 cases articular or periarticular inflammation was a uniform feature in all of the patients. The most common finding was periarticular tenderness. Heat, swelling, and redness were observed less commonly. The wrist, knees, ankles, and small joints of the hand were involved in that order of frequency. The shoulder and elbow joints occasionally were affected. Involvement was polyarticular in nine patients and monarticular in four. Only once was purulent arthritis encountered; in this instance culture of the joint fluid grew *N. gonorrheae*.[3]

Skin—The series of 14 cases reported in 1963 was the largest ever reported with gonococcal skin lesions. Prior to this there was a paucity of reports in the English literature.[3] Two types of mature skin lesions have been observed consistently in gonococcal bacteremia: (1) hemorrhagic and (2) vesiculopustular on an erythematous base.[6] In 12 of the patients in this study only a single crop of lesions appeared, whereas, in two, successive lesions developed. Lesions were usually four in number and widely distributed. The most common site of involvement was the distal portion of the extremities particularly in region of the joints. The scalp, face, trunk, and oral mucous membranes were spared. Often the lesions were in various stages of development. They were discrete and varied from one to two mm. to two cm. in diameter. Initially, a pinpoint erythematous macule appeared which rapidly became maculopapular, vesiculopustular, and hemorrhagic. In certain instances bullae occurred. Mature lesions usually were elevated and slightly umbilicated. The center was necrotic, dirty gray and with an irregular violaceous border surrounded by an erythematous areola. The lesions usually were tender, especially in the early stages, but pain was not a prominent feature.[3]

While the precise pathogenesis has not been established, it is likely that the cutaneous eruption in benign gonococcemia results from bacterial embolization accompanying the transient bacteremia. The finding of organisms in the lesions supports this view. Further evidence for this mechanism of production is the gross appearance of the lesion. The central zone of necrosis and the adjacent area of extravasated blood, surrounded by a band of hyperemia, all are characteristic of a septic infarct. The frequent failure to recover organisms from the skin lesions has been considered evidence against a bacterial embolic etiology. However, because of the transient nature of the bacteremia, and the early use of antibiotics in febrile illnesses, gonococcemia may be difficult to verify.[3]

There are no specific alterations of laboratory values in gonococcemia except for demonstrating organisms in histopathologic section, smear and culture. Nonspecific laboratory abnormalities may include leukocytosis and an increased sedimentation rate.[1]

Ackerman has reported that the world's literature contains only six reports of culture of *N. gonorrheae* from cutaneous lesions. The problem of finding *N. gonorrheae* in cutaneous lesions may be best explained by the number of organisms seeding the blood and by the age of the lesions examined. It is his impression that the histologic, and perhaps cultural, finding of gram-negative diplococci in the skin becomes more probable the greater the bacteremia and the younger the lesion examined.[2]

THERAPY

No rigid criteria for the management of gonococcemia have been established. Penicillin is the drug of choice. The Venereal Disease Branch of the Public Health Service has recommended a minimal dosage of 1.2 to 2.4 million units of penicillin for the treatment of men and women with uncomplicated gonorrhea. If complications such as endocarditis and arthritis are present, large doses (2.4 to 20 million units) of aqueous penicillin should be administered daily until 24 hours after the signs and symptoms have subsided.[8]

CONCLUSION

This case is the seventh report of successful culture of *Neisseria gonorrheae* from cutaneous lesions in gonococcemia. The combination of hemorrhagic and vesiculopustular cutaneous lesions in a patient with fever and arthralgia and/or arthritis, while not specific, is highly suggestive of gonococcemia and further attempts to isolate or culture the organism should be attempted and treatment instituted. □

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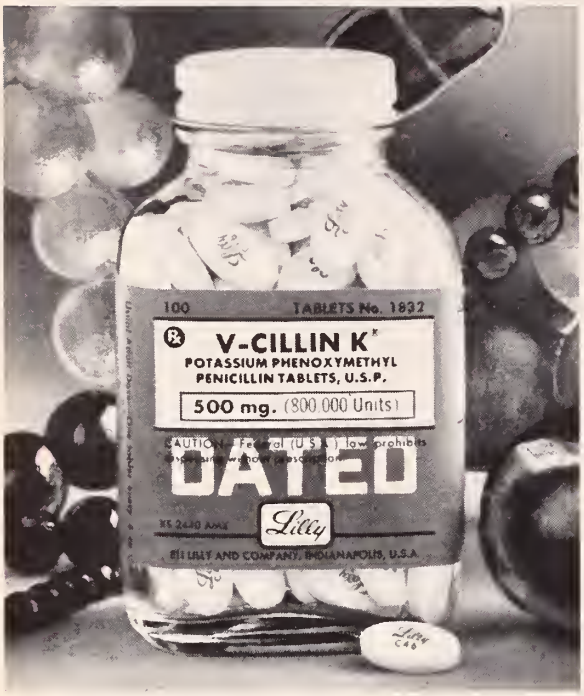
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Contraindication: Penicillin hypersensitivity.

Warnings: In rare instances, penicillin may cause acute anaphylaxis which may prove fatal unless promptly controlled. This type of reaction appears more frequently in patients with a history of sensitivity reactions to penicillin or with bronchial asthma or other allergies. Resuscitative drugs should be readily available. These include epinephrine and pressor drugs (as well as oxygen for inhalation) for immediate allergic manifestations and antihistamines and corticosteroids for delayed effects.

Precautions: Use cautiously, if at all, in a patient with a strongly positive history of allergy.

In prolonged therapy with penicillin, and particularly with high parenteral dosage schedules, frequent evaluation of the renal and hematopoietic systems is recommended.

In suspected staphylococcus infections, proper laboratory studies (including sensitivity tests) should be performed.

The use of penicillin may be associated with the overgrowth of penicillin-insensitive organisms. In such cases, discontinue administration and take appropriate measures.

Adverse Reactions: Although serious allergic reactions are much less common with oral penicillin than with intramuscular forms, manifestations of penicillin allergy may occur.

Penicillin is a substance of low toxicity, but it possesses a significant index of sensitization. The following hypersensitivity reactions have been reported: skin rashes ranging from maculopapular eruptions to exfoliative dermatitis; urticaria; and reactions resembling serum sickness, including chills, fever, edema, arthralgia, and prostration. Severe and often fatal anaphylaxis has occurred (see Warnings). Hemolytic anemia, leukopenia, thrombocytopenia, and nephropathy are rarely observed side-effects and are usually associated with high parenteral dosage.

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See package literature for detailed dosage instructions for prophylaxis of streptococcus infections, surgery, gonorrhea, and severe infections.

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Addiction To Intravenous Darvon, Case Report

MABELLE S. COLLINS, M.D.
JAMES L. MATHIS, M.D.

The devastating effects of addiction to a readily obtainable analgesic make it necessary that practitioners be aware of this complication of Darvon administration.

DARVON IS THE trade name for the synthetic analgesic propoxyphene hydrochloride. Its analgesic strength and action are described as similar to that of codeine. It is not marketed in parenteral form, but this report indicates that intravenous use by addicts may be more widespread than previously known.[1]

A 19-year-old woman was referred for psychiatric consultation after she had taken an overdose of sedatives in a vain attempt to end her pregnancy of three months. She told the physician that she and her husband were narcotic addicts. The husband, age 24, accompanied her to the consultation and volunteered the following story.

He began taking non-narcotic drugs (barbiturates and amphetamines) in his middle teens. The graduation to narcotics led to commitment to the Fort Worth institution when he was 22 years of age. His nine months of confinement and group therapy made him confident that he was cured. He returned to a good job, a wife and a young child to find that his wife had become addicted to demerol during his hospitalization. He took his first "fix" 48 hours after leaving the hospital.

They live in an area in which narcotics are not readily available. Other addicts informed them that a capsule, Darvon Compound, could be obtained from any physician for backache, headache, and so forth. The small tablet of propoxyphene hydrochloride contained in each capsule of the compound can be removed and the powder discarded. It does not dissolve readily, but it may be crushed in a small amount of water, sucked into a syringe through a cot-

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A graduate of St. Louis University School of Medicine, James L. Mathis, M.D., is now Assistant Professor of Psychiatry at the University of Oklahoma School of Medicine. His medical affiliations include the American Psychiatric Association, the American Psychosomatic Society, the Alpha Omega Alpha and the Mid-Continent Psychiatric Association.

ton filter, and injected intravenously. At the time of consultation the husband required 12 of these tablets at one dose. He, an experienced addict, described the effect as much the same as intravenous codeine, but lying somewhere between morphine and codeine. It is by no means as satisfactory as narcotics, but gives a good "jolt" and temporarily prevents withdrawal symptoms. There are unpleasant side effects of mild nausea, an aching in the joints and muscles, and a sensation of chilling and fatigue five to eight hours after the "fix."

The effect upon veins is devastating. Neither of these young people had a superficial vein which was not sclerosed, and this may be why they were willing to seek help. The husband's one attempt at "skin popping" had produced an abcess of the right forearm, and future "fixes" were a true mechanical problem.

This tragic couple reported that the use of Darvon Compound is becoming widespread in the world of addicts when narcotics are not available. We assumed that they were not aware of the availability of plain Darvon capsules. They were, however, aware of the two disadvantages of the drug: The marked sclerosis of the veins and the rapid development of tolerance. Physicians should prescribe the medication with these facts in mind. □

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Precautions—Overgrowth of nonsusceptible organisms may occure. Constant observation is essential. If new infections appear, appropriate measures should be taken. In infants, increased intracranial pressure with bulging fontanels has been observed. All signs and symptoms have disappeared rapidly upon cessation of treatment.

Side Effects—Gastrointestinal system—anorexia, nausea, vomiting, diarrhea, stomatitis, glossitis, enterocolitis, pruritus ani. Skin—maculopapular and erythematous rashes. A rare case of exfoliative dermatitis has been reported. Photosensitivity; onycholysis and discoloration of the nails (rare). Kidney—rise in BUN, apparently dose related. Transient increase in urinary output, sometimes accompanied by thirst (rare). Hypersensitivity reactions—urticaria, angioneurotic edema, anaphylaxis. Teeth— dental staining (yellow-brown) in children of mothers given this drug during the latter half of pregnancy, and in children given the drug during the neonatal period, infancy and early childhood. Enamel hypoplasia has been seen in a few children. If adverse reaction or idiosyncrasy occurs discontinue medication and institute appropriate therapy.

Average Adult Daily Dosage: 150 mg q.i.d. or 300 mg b.i.d. Should be given 1 hour before or 2 hours after meals, since absorption is impaired by the concomitant administration of high calcium content drugs, foods and some dairy products. Treatment of streptococcal infections should continue for 10 days, even though symptoms have subsided.

In the treatment of syphilis a dosage schedule of a total of 12 to 18 Gm. given in equally divided doses over a period of 10 to 15 days should be followed. Close follow-up observation of the patient is recommended, including appropriate laboratory tests, since demethylchlortetracycline has not had adequate evaluation in all stages of syphilis. Spinal fluid examination should be included as part of this follow-up.

Acute gonococcal anterior urethritis in males has been treated effectively with a single dose of 600-900 mg. of DECLOMYCIN Demethylchlortetracycline. Individuals unable to tolerate large single doses due to gastrointestinal side effects may be treated with 150 mg. every 6 hours for a minimum of 4 doses or 300 mg. every 12 hours for a minimum of 2 doses. Females should be treated with a dosage of 150 mg. every 6 hours or 300 mg. every 12 hours until a cure is effected.

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Consideration of Recent Knowledge on Clinical Management of Hemorrhage in Obstetrics and Gynecology

DANIEL E. SCOTT, M.D.

The sudden death of a young woman from hemorrhage, now usually preventable, continues to be the leading cause of maternal mortality.

INTRODUCTION

IT IS ESPECIALLY tragic when a healthy young woman, mother of several small children, dies suddenly and unexpectedly from hemorrhage in childbirth. This, however, describes the typical patient depicted in a review of statistics of recent maternal deaths reported from several American and Canadian states.[1-7] Over the past three decades the decline in maternal deaths in this country has been dramatic. Current mortality rates are less than one-tenth those in 1930.[2, 6]

Today, however, despite the advent of blood transfusion, hospital delivery, less traumatic obstetrics and rapid transportation, hemorrhage is still the leading cause of obstetric mortality in America.[2, 6] Typical of recent surveys were studies showing that 26 per cent of maternal deaths in Texas[1] and Ohio[7] and 33 per cent of such deaths in Ontario, Canada,[2] were caused by hemorrhage.

Where careful study is undertaken by interested groups to assess preventable factors present in obstetric mortalities, hemorrhage is second only to anesthesia in the assessed degree of physician responsibility, reaching a level of 86 per cent in one recent large survey.[2]

From the Department of Obstetrics and Gynecology, The University of Texas Southwestern Medical School, Dallas, Texas.

Presented at the 1967 Oklahoma State Medical Association Meeting, Tulsa, Oklahoma, May 11th-13th, 1967.

MAJOR CAUSES OF HEMORRHAGE

Before the management of any major hemorrhagic event can be considered, the cause of the bleeding must be defined. Since no treatise of the scope of this presentation can be complete, only the major causes of obstetric and gynecologic hemorrhage will be considered.

I. *Rupture of the Gravid Uterus*:

In many areas, gross rupture of the gravid uterus remains the most common cause of obstetric mortality, even though the event is relatively uncommon.[2, 8] The incidence varies from one per 619 to one in 7,282 deliveries, with an average incidence of about one per 1,800 deliveries.[8, 9, 10] Maternal mortality is very high, ranging from three to 31 per cent of reported cases.[9]

Previous uterine surgery, uterine trauma, especially internal version and extraction, oxytocin, and high parity have been isolated as the main etiologic factors.[8, 13]

Management of this usually catastrophic event is primarily based on early diagnosis. Symptoms of abdominal pain, loss of fetal activity, cessation of labor or shock should alert the attendant to the possibility of

uterine rupture. Manual exploration of the uterus and culdocentesis have been helpful in confirming the diagnosis.[9] Massive blood transfusion and prompt laparotomy are essential and total abdominal hysterectomy should be the specific surgical goal.[8-13] Hypogastric artery ligation may be life saving and should be considered where surgical hemostasis is not easily attained.[10, 14] If maternal and fetal mortality are to be reduced from this complication, the solution lies in prevention, not just in improved treatment. Care of multigravid patients, especially regarding use of oxytocin, must be judicious. Intramuscular use of this drug is especially hazardous. Internal version accounts for about one-third of all ruptured uteri and Greenhill has written, "Internal version is a procedure which should be outlawed,"[8] although delivery of the second twin by this means is often acceptable. Patients should be carefully selected for cesarean section and low segment uterine incisions should be used wherever possible. Unlike the classical variety, scars from such incisions rarely undergo gross separation prior to the onset of labor.[8]

II. *Severe Abruptio Placentae*:

Severe placental abruption associated with death of the fetus is a relatively common problem at Parkland Memorial Hospital. Pritchard and Brekken reported 141 cases appearing between 1956 and 1965, with an incidence of one per 433 deliveries,[15] somewhat less than is usually reported,[16, 17] probably because of strict selection criteria. About one-third of these patients developed hypofibrinogenemia, with plasma values less than 150 mg. per cent occurring in all cases within eight hours of the onset of symptoms. Intravascular coagulation best accounted for the coagulation defects which included thrombocytopenia and depletion of plasminogen as well as hypofibrinogenemia. Fibrinogen was used before laparotomy when abdominal delivery was utilized, but was not often necessary with vaginal delivery. Hypovolemia and renal ischemia occasionally resulted in oliguria but renal failure was avoided by appropriate administration of blood and other fluids. Continuous monitoring of urine flow was an excellent indicator of the adequacy of volume replacement. O'Driscoll and McCarthy have employed monitoring of central venous pressure as a guide to adequate restoration of venous return in 13 patients with severe abruption with encouraging results.[18] They also found the normal central venous pressure in pregnancy to be slightly elevated, ranging from three to 11 cm. of H_2O.

Since bleeding from the uterus following abruptio is often concealed, diagnosis may often be difficult and dangerously delayed as a result. Pritchard measured the blood present within the uterus prior to delivery and found an average of almost 2500 cc in 24 cases of total abruption.[15] Rapid and adequate repair of this marked hypovolemia is best accomplished by rapid administration of an electrolyte solution followed by whole blood as soon as it becomes available. Monitoring of arterial pressure, urine output and central venous pressure are very helpful in assuring adequate fluid therapy as well as prevention of circulatory overload.[15,18] Neither antifibrinolytic agents nor heparin were used in the patients reported from Parkland Hospital and although clot lysis was demonstrated in a few instances, transfusion, fibrinogen replacement and delivery invariably afforded good results. Careful, continuing evaluation of arterial blood pressure, central venous pressure and urine output must be performed, especially in patients with chronic vascular hypertension, if the serious sequelae of renal failure, and even death due to prolonged renal ischemia are to be avoided.

III. *Ectopic Pregnancy*:

Ectopic pregnancy represents the single common gynecologic entity where catastrophic hemorrhage occurs with relative frequency.[19, 20, 21] Prompt diagnosis and rapid institution of proper therapy are especially rewarding; however, errors in diagnosis and management are severely penalized in this additional form of obscure maternal hemorrhage.

Prompt diagnosis is based on a high degree of suspicion involving any female in the reproductive years complaining of abdominal pain. A history of menstrual aberration and the finding of a tender pelvic mass completes the classic diagnostic triad. The confirmatory test usually utilized has

been culdocentesis, with the return of unclotted blood in the syringe demonstrating hemoperitoneum. With proper concern for the possibility of causing dangerous overhydration, replacement of intravascular volume is accomplished with fluids and/or blood by means of a large bore catheter or needle to correct hypotension. Laparotomy, even if fluid therapy does not correct shock, is done, affording the advantage of adequate visualization of the entire pelvis and abdomen, allowing complete assessment of the genitalia, prompt hemostasis, and makes definitive surgery less difficult.[18] Culpotomy is not generally resorted to since the frequent associated pelvic inflammatory disease limits the value of this approach.[18-21] The finding of a recurrence of ectopic pregnancy in about ten per cent of patients continues to persist and such a history should alert the examiner to this possibility. Treatment similar to the above approach has allowed physicians in several institutions to collect hundreds of cases over periods of several years without a mortality.[18, 20, 21]

IV. *Postpartum Hemorrhage*:

Even though postpartum hemorrhage is the most common cause of blood loss in obstetrics, the overt nature of this loss apparently results in more effective management of the patient. Deaths are less common, accounting for about ten per cent of maternal deaths due to hemorrhage.[2, 7] The debilitating effect of loss of large amounts of blood in women, who in general have minimal to no iron stores, is an additional consideration.[17, 23] The diagnosis of excessive blood loss usually is obvious, although physicians generally demonstrate resistance to make large enough estimates of the amount of bleeding. The hypervolemia of normal term pregnancy[25] obviously affords a degree of protection, otherwise, hypotension, renal failure and death would occur much more frequently than is reported with postpartum hemorrhage.

Immediate causes of hemorrhage following parturition are uterine atony, cervical and vaginal laceration and retention of placental fragments. Uterine atony is the most common cause and is responsible for over 90 per cent of the cases.[17]

Effective management depends on prompt volume replacement, administration of an oxytocic agent and careful exploration of the uterus and birth canal with identification of the source. If no uterine defect is found and after removal of any placental fragments, repair of cervical and vaginal lacerations and continuous uterine massage should be done. Hemorrhage persisting after all the above measures indicates surgical intervention. Abdominal hysterectomy is life saving when adequate transfusion and all other measures fail. Ligation of the hypogastric arteries may be the treatment of choice in women of low parity to allow preservation of reproductive function or it may be combined with hysterectomy if control of bleeding is difficult.[14, 24]

The basic protection from mortality and serious morbidity from postpartum hemorrhage depends on preparation for that inevitable event. Blood should be readily available and should be crossmatched on every woman expected to have increased blood loss. Eastman and Hellman feel that today, no woman should die of postpartum hemorrhage, and have shown that alert obstetric staffs with adequate blood banking facilities can accomplish that admirable goal.[17]

V. *Placenta Previa*:

The seriousness of placenta previa is demonstrated not only by the obvious maternal risks, but also by the associated high perinatal loss of about 15 per cent. Some form of placenta previa occurs in one of 200 pregnancies, but the incidence increases with age and parity.[17]

The diagnosis of placenta previa should be presumed in any patient with vaginal bleeding during the last trimester, once abruptio placentae has been excluded. Since vaginal or rectal examination often incites torrential hemorrhage, such examinations should never be done, unless preparations for immediate abdominal delivery are complete and continued bleeding is severe enough

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to necessitate delivery. More extensive techniques employed in localizing the placenta are usually unnecessary since this diagnostic possibility can rarely be excluded completely and the management is not usually altered.

In addition to avoiding pelvic examinations, the success in caring for patients with placenta previa depends on continued availability of compatible blood, constant observation if expectant treatment is used and delivery by cesarean section in most cases. Expectant treatment in or very near the hospital may improve perinatal survival in selected cases.

If proper management and prompt hospitalization are used, deaths from hemorrhage of placenta previa can be almost totally prevented, although some fetal damage and loss seems inherent in the disease process.

VI. *Comment*

Effective management of hemorrhage associated with pregnancy can be organized into three categories: (1) facilities, (2) personnel, (3) approach and techniques.

There appears to be little reason for obstetric or gynecologic patients to be delivered or operated upon using grossly inadequate facilities today. The availability of blood in adequate amounts, emergency medications and equipment, a complete major surgical unit as well as monitoring and resuscitative equipment, is largely the responsibility of the physician caring for patients who may require such facilities.

The best and most expensive equipment, however, is worthless in untrained hands. The continued in-service education of paramedical personnel in basic as well as newer techniques of patient care is also vital. The individual physician must continue to lead in maintaining his own professional excellence, which is rightly the tradition of our practice of medicine. It is also the physician's responsibility to participate actively in educational process in his medical community.

Patients continue to benefit from carefully studied and controlled new techniques and approaches. Thorough study of hemorrhagic shock in dogs and in man by Shires, *et al.*, led to the discovery of a pronounced disparate reduction of extracellular fluid. Initial treatment with balanced salt solution followed by blood transfusion has both increased survival and caused a concomitant reduction in blood expenditure.[26] Treatment of anemias resulting from major blood loss with effective oral and parenteral iron has reduced the need for blood transfusion even further.[27] Monitoring of the acutely ill patient by improved methods, such as intermittant central venous pressure recordings and rapid analysis of blood constituents by micro techniques have been valuable recent contributions. The prime requisite for good patient care, however, is continued clinical assessment by an alert and informed physician.

VII. *Summary*:

Hemorrhage continues to be the number one killer of young women who are pregnant. No longer is fatal hemorrhage associated with child bearing acceptable as one of the calculated risks of living in our present society. In fact, hemorrhage has been assigned one of the highest degrees of physician responsibility of any category in maternal mortality causes.

With improved antenatal supervision of pregnancies, early detection of hemorrhage in pregnancy, prompt replacement of depleted intravascular volume with appropriate fluids and a definitive, prompt approach to hemostasis, combined with continued clinical and laboratory assessment of the patients' response to treatment, the remarkable gains in maternal health documented in the past three decades can be continued.

The problem of treating severe hemorrhage associated with pregnancy is now a challenge that can be met effectively. It is the responsibility of all who care for the pregnant patient to have the *facilities*, the *techniques* and the *clinical acumen* to eliminate "maternal death due to hemorrhage" from the reports of maternal mortality committees. □

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Some Principles in the Selection of Antimicrobial Agents

HARRIS D. RILEY, JR., M.D.

This article provides a comprehensive review of the factors and principles in the selection of an antimicrobial agent as well as the fundamentals of treatment of bacterial infections.

ANTIMICROBIAL AGENTS represent in all probability the most useful and yet the most misused of all therapeutic agents in medical practice. There is little doubt that the therapeutic triumphs with these agents have changed the entire practice of medicine. This has been most noticeable in the field of pediatrics, but it has had an effect on every branch and facet of medicine. The effect of antimicrobial drugs on the shortening of illness, on the avoidance of serious complications, on the reduction of mortality and even in the prevention of illness constitute one of the greatest achievements in medical history.

Literally thousands of antimicrobial agents have been isolated, but most of these never reach a human patient therapeutically because they are too toxic even for animals. Each year more than three million pounds of antibiotics are produced in this country. Penicillin for drug use accounts for 25 per cent of the total.[1] Each year between 20 and 50 tons of penicillin are sold in this country.[2] In 1945 only one form of penicillin was available. At present there are more than 150 different preparations of this drug. A recent survey indicated there were 69 antibiotic agents on the market which contained two, three, four, or five antibacterial agents in combination.[3]

It has become readily apparent that the rapid conquest of one disease process after another by antibiotic agents has slowed. It is also quite apparent that these agents are not without danger, and at the present time there is a great need for greater discrimination in selection of the patient to be treated, of the agents to be used and in the determination of the length of therapy.

Thus, as Kagan[7] has stated, when considering the choice of an antimicrobial agent one must be prepared for change—changes of biologic characteristics of both the attacking organism and the human host. One can anticipate, therefore, the need for continuous search for new antimicrobial agents and continuous re-evaluation of the ever-changing relations among microbes, antimicrobial agents, and man.

HISTORICAL NOTE

Although various chemicals have been used for the treatment of infectious diseases since the seventeenth century (*e.g.*, quinine for malaria and emetine for amebiasis),

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chemotherapy actually began with Paul Ehrlich. He was the first to formulate the principles of selective toxicity and to recognize the specific chemical relationships between parasites and drugs, the development of drug-fastness in parasites, and the role of combined therapy in combatting this development. Ehrlich's experiments in the first decade of the twentieth century led to the arsphenamines, the first major triumph of planned chemotherapy.

The current era of antimicrobial chemotherapy began in 1935 with the discovery of the sulfonamides by Domagk. In 1940, Chain and Florey demonstrated that penicillin, which had been observed in 1929 by Fleming, could be made into an effective chemotherapeutic substance. During the past decade chemotherapeutic research has centered largely around antimicrobial substances of microbial origin called antibiotics. The isolation, concentration, purification, and mass production of penicillin was followed by the development of streptomycin, chlortetracycline, oxytetracycline, chloramphenicol, and many other agents. Although these substances all were originally isolated from filtrates of media in which their respective molds, or streptomyces, had grown. several subsequently have been synthesized. In recent years chemical modification of molecules by biosynthesis has become an important method of new drug development.[3]

PRINCIPLES OF THERAPY

In the clinical management of bacterial infections in man, selection of the most effective antimicrobial agent is of prime importance. Although this presentation is concerned primarily with the drugs of choice in various bacterial infections, it should be remembered that this represents only one facet, albeit an important one, in the overall care of the patient. Thus, proper fluid and electrolyte balance, establishment of an adequate airway and a multitude of other important factors must be considered, but do not come within the scope of this discussion.

Selective Toxicity: The fundamental principle of cheomtherapy is the principle of selective toxicity, which may be stated as follows: In order to be useful for systemic treatment of infectious disease, the substance must be harmful to parasites, but relatively innocuous to host cells. This is the main point that differentiates the antibiotics from disinfectants or antiseptics, which are highly active against the parasite *in vitro*, but are not sufficiently well tolerated by the host to permit systemic administration. The "lack of selectivity" of most disinfectants is attributed to their activity as "general protoplasmic poisons."

The mere ability of a substance to inhibit or kill microorganisms in the test tube, however, does not constitute chemotherapeutic effectiveness. While many good chemotherapeutic agents also possess *in vitro* activity in very low concentrations (0.001-5 mcg/ml), their important characteristic is their ability to inhibit or kill microorganisms *in vivo* in equally small concentrations and without any significant damage to host tissues. The reason for this relative lack of toxicity is often obscure; in many cases the enzymes believed to be affected in the sensitive bacteria are essential components of the host cells, also. On the other hand, for each antimicrobial agent found safe for therapeutic use, hundreds have been discarded because they proved as toxic to the host as to the parasite.

In many cases the specific mechanism of antibacterial action is not fully known. Sometimes there appears to be interference with late stages of protein synthesis by the microorganism. In other instances the synthesis of the bacterial cell wall appears to be impaired or the cell membrane damaged.[4]

Classification of Antibiotics: Antimicrobial drugs are classified as bactericidal (those which kill bacterial organisms) or bacteriostatic (those which primarily inhibit bacterial multiplication which, however, re-

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Table 1
Classification of Antibiotics

Group A—Bactericidal	Group B—Bacteriostatic
Penicillin and homologues	Tetracycline
Streptomycin	Chlortetracycline
Bacitracin	Oxytetracycline
Neomycin	Chloramphenicol
Polymyxin-B	Erythromycin
Cephalothin	Sulfonamides

sumes upon removal of the bacteriostatic drug). Examples are shown in table 1.

Bactericidal agents actually differ from bacteriostatic agents only in the fact that their action is irreversible. The difference between bacteriostatic and bactericidal action appears to be a quantitative rather than a qualitative one. Agents may be bacteriostatic at a given concentration and for a given exposure while increasing concentration or exposure may cause a progressive shift towards bactericidal action. Primarily bactericidal agents in common use are penicillin and related agents and streptomycin. Primarily bacteriostatic agents are tetracycline and related compounds, chloramphenicol, erythromycin and sulfonamides.

Pharmacologic Action: In many instances knowledge of the pharmacologic properties of the antibacterial agent is most useful. For example, consider the patient with impaired renal function and an infection for which one of the tetracycline group of drugs is indicated. Chlortetracycline would be preferred to the other homologues because it is destroyed in the tissues rather than being dependent on renal excretion for its elimination like the other tetracyclines. Although it is touted as a "broad spectrum" drug with activity against both gram positive and gram negative organisms, ampicillin has proved to be rather disappointing in the treatment of bacterial enteritis due to Shigella species, Salmonellae, and enteropathogenic E. coli in many instances. On the other hand, experience with this agent in the treatment of carrier states due to these organisms and typhoid carriers has been encouraging. Why the difference? It is probably because of the fact that the biliary excretion of ampicillin is considerably greater than that of penicillin, chloramphenicol and most other agents. Since Salmonella species tend to reside in the biliary tree, the organisms are subjected to a high concentration of the drug during therapy with ampicillin.

FACTORS IN THE CHOICE OF AN ANTIMICROBIAL AGENT

Antibiotic and chemotherapeutic agents are indicated for (1) diseases in which a specific microbial etiologic agent has been identified by culture or serology, (2) for diseases in which the clinical picture implies a definite etiologic diagnosis and (3) as a possible life-saving measure in a desperately ill patient without an exact or complete etiologic diagnosis.

The fundamental principles of therapy in infectious diseases are:

(1) Identification of pathogen.
(2) Selection of therapeutic agent(s).
(3) Administration of adequate amounts of drug to destroy pathogen.

In table 2 are listed some of the more important factors to be considered in choosing of an antibiotic. Some of the details of these factors follow.

Clinical Impression of Etiology: Obviously, this is the first step and is the most important consideration. A knowledge of the most probable causative agent of various illnesses is helpful in assessing the clinical estimate of the etiology. For example, a clinical diagnosis of acute vesicular or ulcerative tonsillopharyngitis suggests a viral etiology, most likely coxsackievirus-A or one of the adenoviruses, both of which are not affected by antimicrobial agents. On the other hand, a diagnosis of acute exudative pharyngitis, particularly if accompanied by

Table 2
Factors in the Choice of an Antimicrobial Agent

Clinical impressions of etiology
Epidemiologic factors
Nature of the infection
Identification of causative agent
Susceptibility of the infecting organisms
Host factors
Potential toxicity
Pharmacologic characteristics of the drug
Clinical trial
Cost and physician's preference

a leukocytosis, suggests a streptococcal etiology.

Epidemiologic Factors: The estimate of the etiology of the infection will be influenced by the knowledge of what is prevalent in the community at a given time. The other obviously important factor in this regard is the presence of illness and its nature in other members of the family.

Nature of the Infection: The proper selection and application of antibacterial agents are based on knowledge of the pathogens and of the pathogenesis and clinical course of the disease it produces. In order to use antimicrobial agents intelligently the physician must maintain current information, not only of the natural history of an infectious disease, but also of its changing etiology. For example, in a particular locale during one year or one season the respiratory syncytial virus may be the predominant cause of cases of acute infectious croup. In the next year, however, the majority of cases may be due to Haemophilus Influenzae, Type b; appropriate antimicrobial therapy is then of course indicated. By the same token, susceptibility of the same organism in the same period of time but in different locales varies greatly.

The type of infection will affect the decision to withhold or initiate antimicrobial therapy. For example, many cases of acute bronchiolitis, which may be either bacterial or viral in origin, are associated with significant morbidity and often resemble severe bacterial bronchopneumonia. Consequently, the physician is frequently justified in initiating antimicrobial therapy for this disease, at least in clinically severe cases. Subsequently, the drug may be discontinued if the clinical course and bacteriologic studies rule out a bacterial etiology.

Although the treatment of choice for most infections depends more on the character of the infecting pathogens than on the body system or area affected, it is still important to identify the site of the infection as accurately as possible. In addition to providing leads as to the most probable causative agent, it also influences the choice of drug because the tissue in which the infection exists influences the choice to some extent. This is because higher concentrations of some drugs are obtained in certain tissues other than of other drugs.

There is significant difference in antibacterial therapy in infants and children as compared to the adult patient. One of the major differences in clinical application is due to the difference in causative agents of disease in different age groups. Meningitis is a good example. In the newly born infant meningitis is most often due to Escherichia coli or other coliforms. Because of the pressing need to initiate treatment before the results of cultures are obtained, the clinician should start therapy with drugs effective against this organism rather than choosing antimicrobial coverage specifically for Hemophilus Influenzae, which almost never occurs in the newborn age group. On the other hand, in infants from six months to three years, Hemophilus Influenzae is the most likely etiology of the meningitis and therapy should be directed towards this particular organism.

Identification of Causative Agent: Once the clinical diagnosis has been made, a tentative working etiologic diagnosis often can be made before the bacteriologic result has been received. A reasonable guess as to the likely bacterial pathogen present is frequently possible on clinical grounds alone. This may be based on previous experience with the prevalent illness in the community or family, or a proven bacteriologic diagnosis in a previous illness with a similar picture. A specific bacteriologic diagnosis of course is desirable and steps to accomplish this should be taken whenever possible and practical.

In the management of an individual acutely ill with an infectious disease for which antimicrobial therapy is deemed necessary, administration of the antimicrobial agent should not be delayed until bacteriologic identification is available, but appropriate material for culture and other laboratory studies should be obtained before therapy is instituted. The initial selection of antimicrobial agents should be based on an educated guess to include coverage of the most likely pathogens. Such decisions are particularly important in serious infections such as meningitis and septicemia and for infections in the newborn and premature infant. When the laboratory data become available

and the response of the child to the initially prescribed antimicrobial agent has been observed, the decision can be made to continue or to change the therapeutic program.

There are, however, situations in which the failure to obtain bacteriologic study is hazardous. These are primarily in the fields of acute and chronic bacterial infections and include such conditions as pyelonephritis, bacterial endocarditis, meningitis, and osteomyelitis.

In Vitro Susceptibility of the Infecting Organisms: The development of modern chemotherapy has made clinicians increasingly dependent on the microbiology laboratory for assistance in the treatment of infectious diseases. Although many common infections of previous years may now constitute comparatively minor therapeutic problems, certain ones, notably those due to staphylococci and gram negative bacteria, have shown an alarming increase in incidence and severity. Consequently a continuing series of antibiotics is being introduced in an attempt to control these resistant organisms. The availability of so many antimicrobial agents with overlapping spectra has increased the dependence on the laboratory. Furthermore, individual strains within a given species differ greatly with respect to their pattern of susceptibility, so that selection of the proper therapeutic agent on an empiric basis is difficult and frequently impossible.

Drug susceptibility testing of the infecting organism against various drugs is, of course, of great value and is extremely important. All too often, however, it is abused. A common example is the request by physicians for *in vitro* susceptibility studies of isolates from the pharynx. From a practical therapeutic standpoint, the only organism in which the physician is concerned in bacterial pharyngitis is the Group A beta hemolytic streptococcus (with the exception, of course, of the diphtheria bacillus and a few other rare organisms which can produce a primary pharyngitis). All such streptococcal strains are susceptible to penicillin and there is no need for *in vitro* susceptibility studies. On the other hand, all too often these tests are not used when they can afford the most help, such as in the management of a patient with a urinary tract infection.

In vitro susceptibility results also are useful because they can provide a guide to the amount of drug necessary to inhibit the infecting organism. The tube dilution method is, of course, more accurate than is the disc method.

There should be strong reservations, however, in the clinical application of results obtained from these studies. It should be recalled that these are *in vitro* tests and do not necessarily reflect the *in vivo* conditions. This is particularly true when a mixed flora is present for symbiotic relationships may alter the response of organisms to drugs. For example, the elaboration of proteolytic enzymes by strains of staphylococci may digest proteins which then will allow some strains of enteric organisms to use these breakdown products for nutriment.

In some situations, especially in serious infections such as bacterial endocarditis, an assay of bactericidal activity in the serum is most useful. This test determines whether adequate amounts of the correct drug are being administered to the patient from whom an etiologic organism has been isolated.

Host Factors: A variety of host factors may influence the choice of a particular antibacterial agent. The patient may be allergic to the drug of choice, and in this event the second best drug should be selected. Other host factors such as age, immaturity, the presence of another disease such as rheumatic fever or renal disease, might affect the selection of the antibiotic.[8] Sulfonamides are contraindicated in the newborn and premature infant because of their ability to produce kernicterus. Another significant difference in the treatment of infants and children as compared to adults is related to the size of the dose and the mode of administration. Palatability and acceptability by the child are of much more importance in consideration of oral medication than in an adult.

Potential Toxicity: This factor is obviously important. A common error is the use of agents with serious toxic potential for the treatment of mild infections or those which are not life-threatening when other agents just as effective and much safer are avail-

able, *e.g.*, chloramphenicol for the treatment of otitis media. The physician is usually aware of the "major" toxicities of an agent such as allergic reactions to penicillin, but all too often he doesn't consider some of the more subtle hazards. For example, potassium penicillin contains 1.6 mEq of potassium per 1.0 million units. Administration of therapeutic doses for an adult to newborns or premature infants with immature renal function can readily lead to hyperkalemia and death.[9]

Clinical Trial: The clinical trial is sometimes useful in the selection of appropriate antimicrobial therapy. There are occasions when the infecting organism is not identified and drug susceptibility tests indicate that no agent is effective or when there is no cumulative experience on the nature of the infection. Under these circumstances a clinical therapeutic trial of an antimicrobial agent may be justified. This may occur, for example, in a patient with suspected osteomyelitis. When such situations arise, an attempt to make as accurate a diagnosis as possible must be made and then a trial with a drug begun. When, in the course of the treatment of any infection despite the method of selection of drug, failure or loss of response occurs, the clinician is obligated to re-evaluate the agents used. Often a change will be indicated.

Cost and Physician's Preference: The factor of cost may influence the choice of a sulfonamide in preference to a more expensive tetracycline preparation. Past personal experience such as the occurrence of a severe toxic reaction from a particular agent obviously has a profound effect on a physician's choice of an antimicrobial agent.

CERTAIN GUIDELINES TO TREATMENT

Combined Antibiotic Therapy: About one-fifth of all hospitalized patients in this country receive an antibiotic, and about half of them are given two or more antimicrobials simultaneously. It has been stated already that at present a large number of preparations provide fixed combinations of two, three, four or five antibiotics. Commercial exploitation of physicians' fear regarding the emergence of resistance or his own diagnostic capabilities has resulted in much needless and sometimes dangerous multiple antibiotic therapy. Fixed combinations are particularly undesirable in the pediatric age group as judged by the fact that many of such fixed combinations are not particularly suited for pediatric therapy. For example, a fixed combination of penicillin and streptomycin (such as Combiotic®) provides a dose of streptomycin which is too high and one for penicillin which is too low for optimal therapy of most infections in children. When combinations are desired, the physician should prepare his own in an appropriate ratio.

Jawetz[6] recently has summarized the possible indications for using two or more antibacterial agents simultaneously:

(1). In certain desperately ill patients with infections of unknown etiology, it might be desirable to administer more than one antimicrobial drug in an effort to "cover" the most likely pathogenic organisms. Prior to such treatment all steps must be taken to initiate laboratory tests designed to establish an etiologic diagnosis. The drugs are "aimed" at the organisms most likely responsible for the clinical picture encountered, and they are administered only until discovery of the etiologic agent permits specific therapy.

(2). In mixed infections it is possible that two or more drugs, each acting on a separate portion of the complex microbial flora, may be more effective than one. This applies occasionally to infections of the skin, wounds, and body cavities, particularly when poorly absorbed antibacterial drugs of narrow spectrum are used topically (*e.g.*, polymyxin, neomycin, and bacitracin). It may apply sometimes to mixed infections of the cardiovascular, respiratory or urinary systems.

(3). In some clinical situations the rapid emergence of bacteria that are resistant to one drug may impair the chances for cure. The addition of a second drug sometimes delays the emergence of resistant strains. This effect has been demonstrated unequivocally in tuberculosis and is the basis for the frequent use of combinations of streptomycin, isoniazid, and para-aminosalicylic acid (or other drugs). It may apply perhaps to other chronic infections and is the basis for the belief that erythromycin, novobiocin, streptomycin, or similar agents should not be given

alone for protracted periods because resistance to each drug is likely to develop.

(4). Sometimes drug combinations may reduce the incidence or intensity of adverse reactions. A given microorganism may be susceptible to each of two drugs but only in concentrations that are likely to give rise to severe adverse reactions. However, if the drugs are used simultaneously, each can be used in half the concentration, below the threshold of adverse reaction. For example, a Pseudomonas strain might be inhibited by polymyxin 5 μg. per ml. or chloramphenicol 30 μg. per ml. used singly, or by a combination of polymyxin 2 μg. per ml. and chloramphenicol 15 μg. per ml. The latter levels can be achieved by using reasonably well tolerated doses of each drug, whereas a dose of polymyxin sufficient to yield blood levels of 5 μg. per ml. will give rise to severe adverse effects.

(5). At times the simultaneous use of two drugs achieves an effect not possible with either drug alone. One drug may specifically enhance the antibacterial activity of the second drug against a specific microorganism. Such an effect could be considered "synergism," a term that has been much abused. Unfortunately, such desirable "synergism" is unpredictable: A given combination of drugs has to be specifically tailored, by laboratory data, to fit a certain isolate of a given microorganism. A synopsis of the dynamics of combined antibiotic action is given later in this discussion. One of the best established examples of "synergism" is the cure of bacterial endocarditis caused by enterococci (Streptococcus faecalis) by using a combination of penicillin with streptomycin as compared to the usual failure of treatment with penicillin alone.

When two antibiotic agents act simultaneously on a homogeneous microbial population, the effect may be one of the following:

(1) Indifference. Their combined action is no greater than that of the more effective agent when used alone.

(2) Addition. The combined action is equivalent to the sum of the actions of each drug when used alone.

(3) Synergism. The combined action is significantly greater than the sum of both effects.

(4) Antagonism. The combined action is less than that of the more effective drug when used alone.

These effects have been studied carefully by Jawetz[5] in both *in vitro* and *in vivo* experiments. It is his feeling that antagonism is sharply limited by time-dose relationships and is, therefore, an unlikely event in clinical antimicrobial therapy. Indifference or simple addition are the most common effects of drug combinations. Synergism is the most desirable clinical result of combined drug action in the treatment of bacterial infections, but it is relatively rare. Antibiotics are arranged in two groups as shown in table 1. Jawetz[5] has devised a tentative scheme of action of combined antibiotics which may provide guidance.

A + A = Often synergistic or indifferent, never antagonistic.

B + B = Often additive or indifferent, never synergistic.

A + B = Indifferent, antagonistic, or synergistic, depending on behavior of microorganisms toward Group A drug.
If very A- sensitive, occasional antagonism.
If relatively A- resistant, occasional synergism.

In practical terms, if an organism is relatively resistant to any of the bactericidal agents, the addition of a bacteriostatic drug or another bactericidal agent may lead to an added or synergistic effect. On the other hand, if the organism is quite sensitive to any of the bactericidal agents, the addition of a bacteriostatic drug occasionally may interfere somewhat with the action of the effective bactericidal agent.[3]

Duration of Therapy: It is well to remember that a drug chosen for the treatment of a bacterial infection requires some time to act. The switching of antibiotics, or the adding of a second and third antibiotic agent within 24 hours because the patient does not promptly become afebrile, usually leads to more difficulties than it solves. In general, at least 48 hours and frequently 72 hours or more should be allowed to ascertain the response; depending on the nature of the in-

fection and the urgency of the situation that confronts the physician, antibiotic therapy, should be continued for an adequate period even in the face of prompt clinical response to insure complete eradication of the infection. If there is an indication for its initiation, indeed therapy for many months may be necessary in the treatment of difficult chronic infections of bone, kidney, skin, etc.

Error and Indiscriminate Use: It is estimated that one out of every four people in this country receives penicillin in a year. It is further estimated that 90 per cent of this is wasted. In one community a careful study of practice was conducted. For the purpose of the study, almost any reason was accepted as valid for the use of antibiotics, even a one degree F. rise in temperature above normal. In spite of this, it was found that antibiotics were prescribed without even these indications in over 50 per cent of the cases. The World Health Organization reported that in the United States alone an estimated 1,000 persons died by 1957 after improper use of penicillin. Fortunately, not more than 25 out of every 10 million penicillin injections leads to serious consequences. Of these, however, three may be fatal.[2] An estimated 33 per cent of hospitalized patients receive antibiotics.[1]

Most of the errors in antimicrobial therapy can be grouped under three categories:

(1) Unnecessary therapy.

Too frequently the fact that these agents are antifectives rather than antipyretics is forgotten. Most of them are costly and may cause disorders far more serious than those for which they are so widely and indiscriminantly used. They are probably not indicated in the majority of instances in which they are prescribed. The obvious difficulties related to the management of the individual patient are: (a). The immediate uncertainties as to whether the infection is severe enough to require specific therapy, and, if so, whether the infection is apt to be caused by an organism susceptible to any of the available antimicrobial agents. (b). The feeling of the doctor that he must be doing something for his patient. (c). The insistence of the patient or his family that something be done. Physicians caring for children have the opportunity to make an important contribution in the field of health education by providing parents and often patients with an adequate explanation of the illness whether medicinal therapy is or is not prescribed. The economic saving in the country as a whole would be incalculable if only necessary medication were prescribed. Most of the waste of antibiotics today is related to minor respiratory illnesses of non-bacterial etiology, unreasonable and mostly hypothetic prophylaxis, unnecessary combinations of antibiotics and excessive amounts of drugs. It is well to remember that the drug chosen for the treatment of bacterial infection requires some time to become effective. The switching of antibiotics or the adding of other antibiotics within 24 hours because the patient does not become afebrile promptly usually leads to new problems. In general at least 48 hours and frequently 72 hours or longer after the drug has been started should be allowed to ascertain the response depending on the nature of the infection.

(2) Use of the wrong agent.

A common example is the choice of penicillin for infection usually due to organisms which are insensitive to this agent.

(3) Inadequate dose or improper administration of the appropriate agent.

A common example is the failure to continue therapy in a deep-seated infection such as purulent otitis media after a prompt clinical response to an initial injection of penicillin G. Even if the agent chosen to treat a particular infection is correct, satisfactory results may be obviated by improper administration, *e.g.*, the use of oral therapy in a patient whose infection is accompanied by persistent vomiting.

DANGERS OF ANTIMICROBIAL THERAPY

These include five major problems and in general are related to indiscriminate or inappropriate use of antimicrobial agents.

(1) Changes in the normal flora of the body with disease resulting from superinfection due to the over-growth of antibiotic resistant organisms such as staphylococci or gram negative organisms.

Table 3
Antimicrobial Drugs of Choice†

This table should serve as only a guide in the choice of agents for the treatment of various infections.

All of the drugs listed in the table, without exception, can have adverse effects. The penicillins (see footnotes 1 and 4) are often responsible for hypersensitivity reactions; footnote 2 refers to drugs which are most likely to cause serious reactions other than hypersensitivity. As the results of new studies (as well as new agents) become available, undoubtedly some of these recommendations will require revision.

INFECTING ORGANISM	DRUG OF FIRST CHOICE	ALTERNATIVE DRUGS
Gram-positive cocci		
Streptococcus pyogenes groups A, B, C and G	a penicillin[1]	erythromycin; cephalothin
*Streptococcus viridans	a penicillin[1] with or without streptomycin[2]	cephalothin
*Enterococcus	a penicillin[1] with streptomycin[2]	erythromycin or cephalothin with streptomycin[2]; ampicillin[1]
*Streptococcus anaerobius	a tetracycline[2, 3]	a penicillin[1]
Pneumococcus	a penicillin[1]	erythromycin; cephalothin
*Staphylococcus aureus		
non-penicillinase-producing	a penicillin[1]	erythromycin; cephalothin
penicillinase-producing	a penicillinase-resistant penicillin[4]; cephalothin	lincomycin; vancomycin[2]
Gram-negative cocci		
Meningococcus	a penicillin[1]	a sulfonamide[5, 6]; ampicillin[1]; cephalothin; erythromycin
Gonococcus	a penicillin[1]	erythromycin; cephalothin; a tetracycline[2, 3]
Gram-positive bacilli		
Bacillus anthracis (anthrax)	a penicillin[1]	erythromycin; a tetracycline[2, 3]
Listeria monocytogenes	a tetracycline[2, 3]	ampicillin[1]; erythromycin
Clostridium tetani[7]	a penicillin[1]	a tetracycline[2, 3]
Clostridium welchii (gas gangrene)[8]	a penicillin[1] with or without streptomycin[2]	a tetracycline[2, 3] with or without streptomycin[2]
Corynebacterium diphtheriae[9]	a penicillin[1]	erythromycin; cephalothin
Gram-negative bacilli		
*Salmonella[10]	chloramphenicol[2]	ampicillin[1]; cephalothin
*Shigella[11]	ampicillin[1]	kanamycin (oral) or neomycin (oral); a tetracycline[2, 3]; cephalothin; chloramphenicol[2]
*Escherichia coli		
enteropathogenic	kanamycin (oral) or neomycin (oral)	ampicillin[1]; a tetracycline[2, 3]
sepsis	kanamycin (parenteral)[2] or neomycin (parenteral)[2]	chloramphenicol[2]; a tetracycline[2, 3]; polymixin B[2] or colistimethate[2]
urinary infections	a sulfonamide[12]	ampicillin[1]; a tetracycline[2, 3]; nitrofurantoin[2, 13]; methenamine mandelate[13]
*Aerobacter aerogenes	a tetracycline[2, 3] with or without streptomycin[2, 14]	chloramphenicol[2] with or without streptomycin[2, 14]; cephalothin
*Klebsiella pneumoniae	a tetracycline[2, 3] with or without streptomycin[2, 14]	cephalothin; chloramphenicol[2] with or without streptomycin[2, 14]; kanamycin[2]
*Proteus mirabilis[15]	a penicillin[1]	cephalothin; chloramphenicol[2]
*other Proteus	chloramphenicol[2] with or without streptomycin[2, 14]	kanamycin[2]; a tetracycline[2, 3] with or without streptomycin[2, 14]
*Pseudomonas aeruginosa	polymyxin B[2] or colistimethate[2]	no dependable alternative
*Brucella	a tetracycline[2, 3] with or without streptomycin[2, 14]	chloramphenicol[2] with or without streptomycin[2, 14]
*Pasteurella tularensis	streptomycin[2]	a tetracycline[2, 3]; chloramphenicol[2]
Pasteurella pestis (bubonic plague)	streptomycin[2] with or without a sulfonamide[6]	a tetracycline[2, 3]; chloramphenicol[2]

*Bacterial susceptibility tests are usually essential.

†Adapted by permission from *The Medical Letter* 7:81, October 8th, 1965; Revised February, 1966.

Hemophilus influenzae		
respiratory infections	ampicillin[1]	a tetracycline[2, 3]
meningitis	chloramphenicol[2] with or without streptomycin[2]	a tetracycline[2, 3] with or without streptomycin[2]; ampicillin[1]
*Bacteroides	a tetracycline[2, 3]	a penicillin[1]; chloramphenicol[2];
Hemophilus ducreyi (chancroid)	a tetracycline[2, 3]	a sulfonamide; chloramphenicol[2]; streptomycin[2]
Streptobacillus moniliformis (rat bite fever; Haverhill fever)	a penicillin[1]	erythromycin; streptomycin[2]
Bordetella pertussis	ampicillin[1]	a tetracycline[2, 3]
*Mima-Herellea	a tetracycline[2, 3]	kanamycin[2]; polymyxin B[2] or colistimethate[2]
Fusobacterium (Vincent's infection)	a penicillin[1]	a tetracycline[2, 3]; erythromycin
Actinobacillus mallei (glanders)	streptomycin[2] plus a tetracycline[2, 3]	streptomycin[2] plus a sulfonamide[6]
Malleomyces pseudomallei (melioidosis)	streptomycin[2] plus a tetracycline[2, 3]	streptomycin[2] plus a sulfonamide[6]
Donovania granulomatis (granuloma inguinale)	a tetracycline[2, 3]	chloramphenicol[2]; streptomycin[2]
Vibrio comma (cholera)[16]	a tetracycline[2, 3]	chloramphenicol[2]; streptomycin[2]
Acid-fast bacilli		
*Mycobacterium tuberculosis[17]	isoniazid plus p-aminosalicylic acid and streptomycin[2]	cycloserine[2]; viomycin[2]; pyrazinamide[2]; ethionamide[2]
*Atypical mycobacteria[18]	ethionamide[2]	erythromycin; streptomycin[2]
Mycobacterium leprae (leprosy)	sulfones[2, 19]	amithiozone[2]
Spirochetes		
Spirillum minus (rat bite fever)	a penicillin[1]	erythromycin; streptomycin[2]
Borrelia recurrentis (relapsing fever)	a tetracycline[2, 3]	chloramphenicol[2]; a penicillin[1]
Treponema pallidum	a penicillin[1]	erythromycin; a tetracycline[2, 3]
Treponema pertenue (yaws)	a penicillin[1]	erythromycin; a tetracycline[2, 3]
Leptospira	a penicillin[1]	a tetracycline[2, 3]
Rickettsia (Rocky Mountain spotted fever, endemic typhus, Q fever)	a tetracycline[2, 3]	chloramphenicol[2]
Viruses		
Mycoplasma (atypical viral pneumonia)[22]	a tetracycline[2, 3]	chloramphenicol[2]
Psittacosis	a tetracycline[2, 3]	chloramphenicol[2]
Lymphogranuloma venereum	a tetracycline[2, 3]	chloramphenicol[2]; a sulfonamide[6]
Vaccinia	vaccinia immune globulin with or without methisazone	no alternative
Herpetic keratitis	idoxuridine (topical)	no alternative
Trachoma	oral or topical tetracycline[2, 3] plus an oral sulfonamide[6]	chloramphenicol (topical)
Inclusion conjunctivitis	oral or topical tetracycline[2, 3]	chloramphenicol (topical)
Fungi		
Actinomyces	a penicillin[1]	a tetracycline[2, 3]; cephalothin; chloramphenicol[2]
Nocardia	a sulfonamide[6] with or without cycloserine[2]	a tetracycline[2, 3]; chloramphenicol[2]; streptomycin[2]
Histoplasma capsulatum	amphotericin B[2, 20]	a sulfonamide[6]
Candida albicans	nystatin (topical)	amphotericin B[2, 20]
Aspergillus	amphotericin B[2, 20]	no dependable alternative
Cryptococcus neoformans	amphotericin B[2, 20]	no dependable alternative
Mucor	amphotericin B[2, 20]	no dependable alternative
Coccidioides immitis	amphotericin B[2, 20]	no dependable alternative
Blastomyces	amphotericin B[2, 20]	2-hydroxystilbamidine[2]
Sporotrichum schenckii	iodides	amphotericin B[2, 20]
Dermatophytoses (Tinea, etc.)	griseofulvin[21]	no alternative systemic drug

*Bacterial Susceptibility tests are usually essential.

1. Potassium penicillin G, penicillin V, phenethicillin and ampicillin can be used for oral treatment of infections by non-penicillinase-producing staphylococci and other Gram-positive and Gram-negative cocci. Ampicillin is also effective against many Gram-negative bacilli. Although penicillin G is less resistant to degradation by gastric acid than penicillin V, phenethicillin, or ampicillin, the amount absorbed is generally adequate if it is taken on an empty stomach; in fact, absorption of any oral penicillin is likely to be more rapid and complete if it is taken on an empty stomach (at least three hours after a meal), when gastric acidity is relatively low. For severe infections by non-penicillinase-producing staphylococci and other susceptible organisms, potassium penicillin G should be administered parenterally. Procaine penicillin G aqueous, an intramuscular penicillin, can be administered once or twice daily in less severe infections caused by organisms susceptible to penicillin G. Benzathine penicillin G, a longer-acting intramuscular preparation which is also active against such organisms, is used at intervals as long as a week or 10 days for treatment, and as long as a month for prophylaxis against rheumatic fever. Allergic reactions to all penicillins are common. An allergic reaction to one penicillin usually means that it will occur with the others.
2. Capable of causing severe adverse effects.
3. Any one of the tetracycline group of antibiotics can be used (chlortetracycline, demethylchlortetracycline, oxytetracycline or tetracycline hydrochloride).
4. For oral treatment of penicillinase-resistant staphylococci, cloxacillin or, alternatively, nafcillin or oxacillin can be used. For severe infections, a parenteral formulation (preferably methicillin) should be used.
5. Because of the appearance of sulfonamide-resistant strains, a sulfonamide can no longer be considered the drug of first choice for either prophylaxis or therapy of meningococcal meningitis.
6. For parenteral administration, Sodium Sulfadiazine Injection USP can be used. For oral administration, an absorbable sulfonamide, such as Trisulfapyrimidines USP or Sulfadiazine USP, should be used. Long-acting formulations should not be used.
7. Proper debridement and a fluid toxoid booster dose are primary; if there has been no previous toxoid immunization, tetanus immune globulin (human) in doses of at least 3000 units should be administered. Clinicians disagree as to the value of penicillin alone in the treatment of tetanus.
8. Debridement is primary; value of antitoxin is not certain; large doses (at least 10 million units daily) of penicillin G are required.
9. Antitoxin is primary; antibiotics only for carrier state or as adjuncts to antitoxin.
10. Choramphenicol is the first choice for typhoid fever; ampicillin is first choice for other Salmonella infections; most cases of Salmonella infection subside spontaneously.
11. Many, if not most, strains are resistant to sulfonamides, formerly the drugs of choice.
12. For an uncomplicated first episode of lower urinary tract infection with E. Coli or other urinary pathogens, the drug of first choice is one of the soluble sulfonamides, such as Sulfisoxazole USP, Trisulfapyrimidines USP, sulfisomidine or sulfamethizole (but not a long-acting sulfonamide). If after 48 hours there is no improvement, either in symptoms or in urine culture, or if the urinary tract infection is chronic, recurrent or severe, susceptibility tests should be used to select an effective drug.
13. For antibacterial action in urine; little, if any, penetration into tissues; not suitable for systemic infections.
14. Streptomycin is usually included for the treatment of severe infections.
15. Penicillin G and ampicillin are the drugs of first choice in the treatment of Proteus mirabilis infections, but large doses of penicillin G (10 to 40 million units daily) or of ampicillin (6 Gm, or more daily) are necessary. Many strains of Proteus other than mirabilis are resistant to some of the drugs listed; susceptibility tests are necessary.
16. Prompt replacement of fluids and electrolytes is essential.
17. For treatment of tuberculosis, a combination of drugs is preferred.
18. Most atypical mycobacteria are resistant to isoniazid and p-aminosalicylic acid.
19. Acetosulfone, dapsone, sulfoxone sodium or glucosulfone sodium.
20. Amphotericin B (parenteral) is first choice for sepsis, pneumonia, meningitis, and other systemic infections; where topical therapy is indicated, as in enteric infections, nystatin is preferable to amphotericin B.
21. Griseofulvin should be used when topical drugs are ineffective.
22. Properties intermediate between bacteria and viruses.

PARTIAL LIST OF BRAND NAMES

Acetosulfone—Promacetin (Parke, Davis)
Amphotericin B—Fungizone (Squibb)
Ampicillin—Penbritin (Ayerst); Polycillin (Bristol)
Cephalothin—Keflin (Lilly)
Chloramphenicol—Chloromycetin (Parke, Davis)
Chlortetracycline—Aureomycin (Lederle)
Cloxacillin—TegoPen (Bristol)
Colistimethate (polymyxin E)—Coly-Mycin (Warner, Chilcott)
Cycloserine—Seromycin (Lilly)
Dapsone—Avlosulfon (Ayerst)
Demethylchlortetracycline—Declomycin (Lederle)
Erythromycin—Erythrocin (Abbott); Ilosone (Lilly); Ilotycin (Lilly); Pediamycin (Ross); Erythromycin (Upjohn)
Ethionamide—Trecator (Ives)
Glucosulfone—Promin (Parke, Davis)
Griseofulvin—Grisactin (Ayerst); Grifulvin V (McNeil); Fulvicin-U/F (Schering)
Kanamycin—Kantrex (Bristol)
Lincomycin—Lincocin (Upjohn)
Methenamine mandelate—Mandelamine (Warner, Chilcott)
Methicillin—Staphcillin (Bristol); Dimocillin-RT (Squibb)
Methisazone—Marboran (Burroughs Wellcome)
Nafcillin—Unipen (Wyeth)
Nitrofurantoin—Furadantin (Eaton)
Nystatin—Mycostatin (Squibb)
Oxacillin—Prostaphlin (Bristol); Resistopen (Squibb)
Oxytetracycline—Terramycin (Pfizer)
Penicillin G (benzathine)—Bicillin (Wyeth)
Penicillin G (potassium)—many manufacturers
Penicillin V—Compocillin-V (Abbott); V-Cillin (Lilly); Pen-Vee (Wyeth)
Phenethicillin—Syncillin (Bristol; and others)
Polymyxin B—Aerosporin (Burroughs Wellcome)
Pyrazinamide—Pyrazinamide (Merck)
Sulfamethizole—Thiosulfin (Ayerst; and others)
Sulfisomidine—Elkosin (Ciba)
Sulfisoxazole—Gantrisin (Roche; and others)
Sulfoxone—Diasone Sodium (Abbott)
Tetracycline HCl—Achromycin (Lederle; and others)
Vancomycin—Vancocin (Lilly)
Viomycin—Vinactane (Ciba); Viomycin (Parke, Davis); Viocin (Pfizer)

(2) Wide spread sensitization of the population with resulting hypersensitivity and anaphylaxis, skin rashes, hematologic disorders, fever and perhaps delayed connective tissue disorders.

(3) Masking serious infection without eradicating it. A common example is the suppression of the clinical manifestations of an abscess while the infectious process continues.

(4) Direct drug toxicity. This is in general related to the duration of use of certain agents but may occur after a very few doses. Important examples are aplastic anemia due to inappropriate use of chloramphenicol; auditory nerve damage due to streptomycin;

and vomiting and diarrhea from tetracycline therapy.

(5) Development of drug resistance in microbial populations, chiefly through the elimination of drug-sensitive organisms from the antibiotic saturated environment such as hospitals, and their replacement by drug-resistant microorganisms.

ANTIMICROBIAL AGENTS OF CHOICE IN SPECIFIC INFECTIONS

Table 3 lists the antimicrobial drugs of choice in various infections. It should be noted that with the changing nature of the biology of infections, the choice of agents will change in some infections. All the drugs listed in this table without exception can have adverse reactions. Since this table was prepared, two important new agents have become available. Gentamicin is a new antibiotic which has an antimicrobial spectrum resembling that of neomycin and kanamycin. It is effective against a wide variety of both gram positive and gram negative organisms including Pseudomonas species. It is not yet commercially available but has given excellent results in experimental use. Cephaloridine closely resembles cephalothin in its antimicrobial and pharmacologic properties. Its major advantages as compared to cephalothin are that it has a longer half-life allowing it to be given at less frequent intervals and it has increased activity against certain gram positive organisms.

SUMMARY

Guidelines in the treatment of certain infectious diseases and considerations which enter into the choice of antimicrobial agents for therapeutic use have been reviewed. In addition, some of the errors and dangers of antimicrobial therapy and the agents of choice in specific infections have been discussed. □

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ABSTRACTS

AXILLOBRACHIAL ARTERIAL INJURIES

This article is an excellent review of the problem and the author interesentingly describes and illustrates two case reports and then discusses some of the recent changes in management. During the Korean War arterial reconstruction of injured vessels rather than ligation led to reduction in the amputation rate from 51.4 per cent to 13 per cent.

Late complications of vascular injury include infection, hemorrhage, thrombosis, arteriovenous fistula, aneurysm, and amputation. Mobilization of damaged arteries with sacrifice of collateral vessels to achieve primary anastomosis has been known to result in stenosis, thrombosis, infection, and hemorrhage. Saphenous vein autograft has been the most effective grafting material. Prosthetic grafts should be avoided. The surgeon should provide maximum antibiotic support often obtained by use of a multifenestrated wound catheter for constant antibiotic irrigation. The degree of venous injury will dictate whether venous reconstruction is possible.

Technical Considerations in the Axillobrachial Arterial Injuries. Lazar G. Greenfield, M.D., and Paul A. Ebert, M.D. Jr. of Trauma 7(4): 606-612, 1967.

BLOOD FLOW AND SECRETION IN THE STOMACH

Since 1900 there has been an interest in the relation between flood flow and secretion of the stomach. The two main hypotheses have been for or against a causal connection between circulatory and secretory events.

Isolated gastric mucosa has been shown to respond to stimuli such as histamine or pilocarpine in the absence of the circulation. However, it has been difficult to devise studies *in vivo* where both secretory and circulatory aspects can be measured and such studies often show conflicting results.

Abstracts

In order to measure blood flow (both mucosal and total blood flow) and secretion simultaneously and continuously the authors used a clearance technique with amino pyrine to estimate gastric mucosal flow and an implanted electromagnetic blood flowmeter to determine total arterial flow. They were able to demonstrate parallel increases in secretion and mucosal flow in the dog stomach with histamine, porcine gastrin, insulin hypoglycemia, and bethanechol. Secretions and mucosal blood flow were depressed by pitressin, atropine, epinephrine, secretin and isoproterenol. Their findings showed that whenever gastric secretory rate is increased or decreased there is a corresponding change in mucosal blood flow. Through other studies they demonstrated no change of arterial inflow during stimulation of secretion in which both secretion and mucosal blood flow were increased.

Most studies of this problem previously were concerned only with measurements of total arterial inflow rather than mucosal flow. The authors were able to demonstrate: 1. that drugs can act directly by influencing arteriolar smooth muscle tone rather than having to act through vasoactive metabolites, 2. there is a direct correlation between secretory rate and mucosal blood flow, 3. there is a redistribution of blood flow from nonmucosal tissues to mucosal tissues during increased metabolic activity, and 4. there is no correlation between secretory changes and total arterial inflow.

Reviewer's note: Another good example of the results obtained with increasingly sophisticated laboratory concepts and tools.

Blood Flow and Secretion in the Stomach. E. D. Jacobson, K. G. Swan, and M. I. Grossman. Gastroenterology (part 2): 414-420, 1967.

ULTRASTRUCTURE

This study of 12 cases of acquired and congenital heart disease was undertaken to obtain data on the morphological changes in the alveolarcapillary membrane and to see if these changes could be correlated with the physiological and clinical symptoms shown by these patients. Six patients had congenital heart disease and six had acquired heart disease. Lung biopsies were obtained at thoracotomy and electron microscopic studies were made. The article contains excellent photographic studies.

In acquired mitral stenosis there was alveolar and capillary basement membrane thickening. Cases of congestive failure showed increased elastic and collagen fiber deposition, but no increase in basement membrane width. The authors felt that the ultrastructural changes could be divided into two categories: 1. thickening of basement membrane only—seen in mitral stenosis (acquired and congenital) and acquired interventricular septal defect. 2. no change in basement membrane and deposition of connective tissue components—patent ductus arteriosis, pulmonary vein atresia, congenital aortic stenosis, and congestive failure.

Reviewer's note: A lengthy review of other workers' results and conclusions is included in the discussion.

Ultrastructure of the Alveolar-Capillary Membrane in Congenital and Acquired Heart Disease. J. J. Coalson, Ph.D., Oklahoma City, W. E. Jacques, M.D. and G. S. Campbell, M.D., Little Rock, Ark. and W. M. Thompson, M.D., Oklahoma City. Oklahoma. Arch. Path., **83**: 377-391, 1967.

RECENT PUBLICATIONS

The *Journal* welcomes the opportunity to list current publications by any Oklahoma physician.

Primary Lymphoma of the Nose Including a Relationship to Lethal Midline Granuloma. B. S. Eichel, E. G. Harrison, K. D. Devine, P. W. Scanlon, and H. A. Brown. Amer. J. of Surgery, **112**: 697-705, 1966.

Factor Structure of Duncan's Personality Integration Scale. L. Wright. J. of Personality and Social Psychology, **5**: 348-350, 1967.

Postauricular Subperiosteal Abscess in Chronic Otitis Media. W. D. Stuart and J. B. Snow. Southern Medical Journal, **60**: 196, 1967.

Histopathology of Overwhelming Bacterial Infections in Childhood. J. D. Riley, Jr. Proceedings of the Ross Conference on Pediatric Research. Columbus, Ohio, February 1967.

Pigmented Iris and Retrocorneal Membrane Simulating an Iris Melanoma. R. R. Shaver. Arch. Ophth. June 1967.

Eyes: Anatomy Hazards Monitoring Protection. D. W. Bishop, J. Killian, and C. Harlin. National Safety News, **95**: 32, 1967.

Reversible Secondary Disaccharidase Deficiency. J. D. Welsh, and M. G. Porter. Amer. J. Dis. of Child. **113**: 716, 1967.

Electrophysiological and Histochemical studies in noise problems. S. Kawata, T. Morimitsu, K. Matsuo, F. Suga, T. Hayata, T. Morizono, Y. Harada, and T. Nakashima. International Audiology (Leiden), **5**: 245, 1966.

Adoption Problems and the Physician. M. Schechter, P. Toussieng, and R. Gilmartin, Current Medical Digest, June 1967.

Concomitant Herpes Simplex and Herpes Zoster Infection. T. E. Acers. Amer. J. of Oph., May 1967. □

Books As Clinical Tools

CLINICAL REFERENCES ON PEDIATRIC PHARMACOLOGY AND THERAPEUTICS

ARTHUR W. NUNNERY, M.D.

The impetus behind producing new drug products has been dampened to the point where fewer than a dozen truly new drugs are marketed each year. In the recent past, many journals were required to publish knowledge concerning the several hundred new drugs which were marketed yearly. Today, the delay between the completion of basic and clinical research and subsequent Federal approval usually allows for publication before the drugs are on the market and the physician may once again obtain current information from recently published books.

The physician desiring information on therapeutic problems of newborns, infants and children now has several books which are complete, well-written, and easily read. Two of these are organized so the search can be oriented by the disease process or condition thereby eliminating the need for searches of specific drugs to determine what, if any, value they have in a particular condition.

One of these is *Current Pediatric Therapy —1966-67*, edited by Gellis and Kagan. A wide variety of conditions is covered with the therapeutic point of view emphasized. The physician confronted with neonatal myasthenia gravis, for example, and considering neostigmine methyl sulfate (Prostigmin-Roche), will find not only the proper dosage, but also reactions from over-medication and similar facts about pyridostigmin bromide (Mestinon-Roche), which may also be used, that it is available commercially, and that it is the only preparation in syrup form which may be added to the formula. Similar discussions of ambenomium-chloride (Mytelase-Winthrop) and edrophonium (Tensilon-Roche) are included. Both basic practical pharmacology and the practical aspects of administration for children are well covered in almost all instances.

The other book is *Pediatric Therapy*, 1966-67, second edition, edited by Doctor Harry Shirkey. This book goes into the fundamentals of drug treatment in infants and children and these sections should be read by all physicians who are responsible for the care of newborn infants—pediatricians, obstetricians, and other physicians. At least, it should be skimmed though immediately and then referred to whenever the practitioner encounters a therapeutic problem in these age groups. General therapy is also covered and well indexed so that the physician may search for information according to the particular system or systems involved. This book contains an excellent, simplified nomogram for calculating drug dosages from body weight, according to surface area, a procedure which is mandatory in small infants. Many practical aspects of home treatment, drug ordering and prescription writing are covered.

Both of these books give excellent practical therapeutic opinions of outstanding contributors throughout the country. There is a minimum of details on animal or laboratory studies; however, references are listed where this basic material can be obtained.

If a physician only desires to determine the recommended drug dosage for older children, the small pocketbook *Handbook of Pediatrics*, 7th Edition, edited by Silver, Kempe and Bruyn is an excellent source. Over 400 drug products are listed by both brand and generic names. □

From the Department of Pediatrics and the Pediatric Pharmacology Unit, Children's Memorial Hospital, University of Oklahoma Medical Center, Oklahoma City, Oklahoma.

One of a series sponsored by the Department of Continuing Education, University of Oklahoma Medical Center.

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OSMA JOURNAL / heart page

Reflected Ultrasound and the Heart

MAX G. WALTER, M.D.*

WITH THE current availability of reliable, commercially produced diagnostic ultrasound reflectoscopes and the recent appearance of a comprehensive symposium on the uses of diagnostic ultrasound in heart disease,[1] echocardiography or ultrasound cardiography (UCG) as a routine diagnostic procedure in certain types of heart disease appears justified. The high initial cost of the equipment ($5,000 to $30,000 plus) is offset by the advantages of a safe, non-toxic, non-traumatic, informative test which may be repeated as often as necessary and which can be reasonably priced to the patient as compared with other diagnostic procedures and laboratory tests. The information supplied by UCG is comparable to that obtained by cardiac catheterization, angiocardiography, or other potentially hazardous procedures.[1] When recorded simultaneously with electrocardiogram (ECG), phonocardiogram (PCG), apex-cardiogram (ACG), and/or pressure tracings from atria or ventricles, detailed useful information is obtained. Another advantage is that the equipment may be wheeled to the bedside of a critically ill patient.

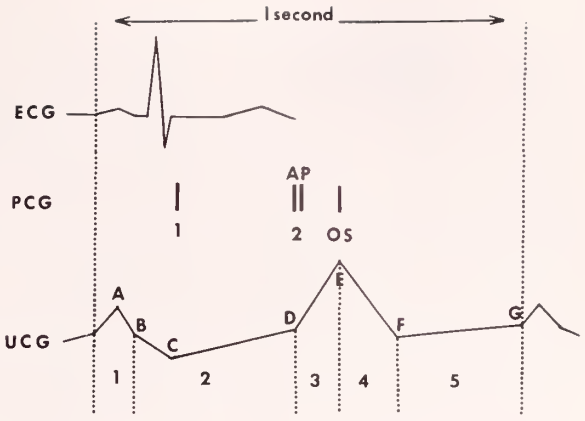
Although the theory of ultrasound waves and their behavior is mathematically complex,[2,3] the basic principles of ultrasound reflectoscopes and their medical applications are easily understandable.[2,4] A one to 2.5 megacycle (mc) radio frequency pulse of one to two microseconds duration is generated by a pulse wave generator at a rate of 200—1,000 times per second. The pulsed RF wave is conducted to a transducer containing a piezoelectric crystal which converts the electrical energy into ultrasound pulses of the same duration, frequency, and repetitive rate. When the transducer is applied to the chest wall with a thin layer of coupling medium such as glycerin or mineral oil, the short waves (approximately 1.5 mm.) of the ultrasound beam are propagated through the tissue at an average rate of 1,540 meters per second. When the ultrasound beam traverses a perpendicular interface created by adjacent tissues of slightly different densities and hence different acoustic impedances, about .01 per cent of the energy is reflected back to the transducer. The returning ultrasound signals are converted by the piezoelectric crystal to electrical impulses which are electronically amplified, processed, and displayed on a cathode ray oscilloscope (CRO) calibrated to show each "echo" at its proper distance from the transducer face. The echos from moving structures such as heart walls and valve leaflets are seen to move along the distance baseline. The magnitude of the returning signals is indicated by the amplitude of echo deflection (A-mode) or the intensity of a bright spot denoting echo position (B-mode). The type of display is selected according to the information desired and recorded instantaneously or over time on self-developing film, or 35 mm. moving film, or one echo is selected and "gated" electronically to a direct writer multi-channel recorder and recorded simultaneously

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with ACG, PCG, ECG, and/or pressure tracings. By varying the position of the transducer and the direction of the beam, echos may be obtained from the myocardium and pericardium, the anterior mitral and tricuspid leaflets, and valve prostheses. Echos from atrial tumors and thrombi, and subaortic valve diaphragms have also been reported.[5, 6] The properly taken record reveals a characteristic curve for each structure and one can measure the distance of the structure from the chest wall, the amplitude of its deflection, and calculate its rate of motion along the axis of the ultrasound beam. A simultaneously recorded timing signal (ECG, etc.) allows precise correlation of points on the curve with their physiologic events.

The curve obtained from the anterior mitral leaflet is conveniently divided into five phases[7] and its points are labeled from A to G (see figure). Phase 1 (GAB) : Opening and closing movements due to atrial systole point A representing maximum opening of the leaflet; Phase 2 (BCD) : Movement of the closed leaflet in ventricular systole; Phase 3 (DE) : Opening movements of the leaflets during rapid filling period, with maximum opening at E; Phase 4 (EF) : Closing movement of the anterior leaflet during the same interval and finally Phase 5 (FG) : Opening movement of the leaflet during slow filling period. An analogous tracing may be obtained from the anterior tricuspid leaflet. Slight changes in the position of the transducer may cause "damping" of the tracing resulting in curves resembling AV valve stenosis when this is not present. This difficulty is minimized by constant practice with the equipment.

The configuration of normal and abnormal echos is related to the diastolic blood flow across the AV valves. Conditions with "high" diastolic flow across the AV valves such as the hyperdynamic heart syndrome, tricuspid and mitral insufficiency, and left to right shunts yield curves with a maximum amplitude of the E point and a maximum rate of motion of the leaflet from E to F.[1] Conditions with slow diastolic flow across the AV valve such as tricuspid and mitral stenosis yield "damped" curves with low amplitude of the E point and slow rate of motion of the leaflet from E to F. Combined stenosis



and insufficiency of an AV valve yields a curve with a large amplitude of the E point and a slow rate of E to F motion from which the predominant lesion can often be predicted. Amplitudes of the E point and rates of E to F motion for normal valves or hemodynamic states lie midway between the above two types of curves and the separation of normal from abnormal curves is statistically and clinically quite good. Thus recordings obtained by an experienced operator may be interpreted with a high degree of confidence.

When correlated with other clinical data, a curve of the "high flow" type from the tricuspid valve can confirm the diagnosis of atrial septal defect. A "high flow" curve from both mitral and tricuspid valves suggests an ostium primum type defect. A "high flow" curve from the mitral valve may be obtained in ventricular septal defects and patent ductus arteriosus. Precise correlation of the size of the shunt with the echocardiogram is not yet possible.[6]

In rheumatic valvular disease, the intensity of the reflected energy from the anterior leaflets of the AV valves is proportional to the degree of fibrotic thickening and/or calcification of the valve.[3, 8, 9, 10] This increased reflected energy is expressed as increased intensity of the CRO trace and can be appreciated on the photographic recording. (It is this fibrosis and calcification which limits the motion of the AV anterior leaflet and produces the low E point amplitude and slow E to F motion.) When sinus rhythm is present, there is excellent correlation of the slow rate of E to F motion with the severity of the AV valve stenosis

as measured by the size of the valve orifice found at surgery.[3, 8, 9, 10] With atrial fibrillation this correlation is less exact but the tracing of stenosis is still present. Following successful mitral commissurotomy, the increased amplitude at the E point and increased rate of E to F motion is readily appreciated.[10] Mitral valve UCG's are thus useful in the pre-operative asssesment and the post-operative follow-up in mitral stenosis. They also provide an easy way to diagnose the so-called silent mitral stenosis in the critically ill patient whose mitral opening snap and diastolic rumble may not be heard.

UCG's are also useful in the differentiation of pericardial effusion from the enlarged heart due to myocardiopathy and/or congestive failure.[11] In the normal state, the echos from the posterior myocardium and pericardium move together with systole and diastole as one echo. When the myocardium and pericardium are separated by effusion, the pericardial echo appears stationary and the clearly distinct echo of the myocardium is seen to move with systole. This method of confirming pericardial effusion apparently is quite reliable. False negatives do occur but false positives are rare and have usually been due to lipoma or other tumor in the pericardial space.

The above applications of the UCG are those for which the most data are available, and those which appear to be the most useful at present. Current research promises new applications to facilitate the diagnosis of aortic[12] and ventricular aneurysms, the assessment of papillary muscle dysfunction in myocardial infarction, the detection of improperly seated valve prostheses,[13] the differentiation of sub-aortic muscular stenosis from sub-aortic diaphragms,[6] and even the evaluation of myocardial contraction.

Indeed, the UCG merits a distinctive place in the diagnostic armamentarium of the physician interested in cardiac disease. □

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MEDICAL SCHOOLS TO ACCOMODATE MORE STUDENTS

During the academic year 1971-72 there will be 10,950 students enrolled in medical schools throughout the United States. This will be an increase of approximately 1,600 over the 1967-68 enrollment.

This increase will be brought about by the opening of new medical schools and the expansion of old ones. By 1971, 15 new schools will be open to increase the yearly enrollment by 930. During the same period many older schools will expand to increase enrollment by an additional 1,261 students.

Even with this rapid expansion over the next five years, the number of physicians graduated in 1975—four years after their 1971-72 freshman year—will fall short of the recommended minimal national objective of 11,000 physicians per year set in 1959. This objective was set by the Surgeon General's Consultant Group on Medical Education and would call for 12,000 freshmen medical students to enter school in 1971 in order to graduate 11,000 four years later.

OSMA European Tour Is Inviting

Many people "dream" of a European Tour as the perfect vacation. Several Oklahoma physicians are now making this "dream" come true for themselves and their families. They are planning to take their families on an OSMA-sponsored European Tour for twenty-three days, July 17th through August 7th, of next year.

This special tour for physicians, their families and friends is being offered in two parts. The first part is a 16-day main tour, featuring visits in London, Stratford-on-Avon, Paris, Lucerne and Rome. The second part is a seven-day extension of the main tour, with visits to Florence, Venice and Berlin. Thus far, 21 persons have made reservations for the main tour plus the seven day extension.

The 16-day main tour costs $680, which includes air fare to and from Europe from New York City. The seven-day extension costs an additional $149 per person for a total cost of $829 for the entire tour.

Physicians wishing to take their children, under age 12, will receive a discount of $115 per child. In addition there will be a savings if a family group uses one of the several economy "family plans" for air travel between Oklahoma and New York City. Arrangements for these "family plan" flights can be made by the physician through the travel agent planning the tour, Travel Unlimited of Tulsa, or directly with the airline.

As of November 1st, 24 persons had signed up for the entire tour, the 16-day main tour and the seven-day extension, of eight European cities. Persons interested in taking only the 16-day main tour are urged to make their reservations as soon as possible. In order for the tour to qualify for the low air fare rate from Rome to New York City, at least 15 persons must be on the flight. If only a few reservations (less than 15) are received for the main tour, it will be necessary to pay a higher air fare on the return from Rome. The seven-day extended tour already has enough reservations to qualify for the lower rate.

During the tour all accomodations will be in first class hotels with either twin or double bed rooms with bath. Travel between cities in Europe will be tourist class on airlines. Sightseeing will be by motor coach or private car. An English-speaking guide will be furnished.

The tour has been carefully scheduled to give the traveler a maximum amount of "free" time for personal sightseeing and shopping in each of the cities visited. In addition, the OSMA Executive Office is making arrangements for postgraduate activities in the various cities to be visited. This will allow physicians to claim part of the tour expense as a legitimate business deduction.

The tour is being planned by Travel Unlimited of Tulsa with air arrangements by Trans World Airlines.

A deposit of $100 is required at the time of registration to insure a place on the tour. Final payment is due 45 days before departure. There will be a full refund if arrangements are cancelled 35 days prior to the departure date.

The "fly now . . . pay later" plan may be used with a ten per cent down payment and up to 36 months to pay the balance. For additional information on this plan, interested persons should contact the tour travel agency.

A colorful brochure, "OSMA European Tour" has been mailed to all members of the OSMA. Additional copies may be ordered from the OSMA Executive Office in Oklahoma City. The brochure outlines the tour on a day-by-day basis.

Tour Highlights

July 17th—Depart New York for London via TWA jet.

July 18th—Arrive London and check in to Hotel Picadilly. Afternoon free.

July 19th—Tour of East End of London, London Bridge and Tower of London.

July 20th—At leisure in London for personal activities.

July 21st—Full day tour of Stratford-On-Avon, the home of Shakespeare.

July 22nd—Fly to Paris and check in to Hotel LeGrand. Afternoon free.

July 23rd—Morning tour of Versailles with afternoon free.

July 24th—All day free in Paris for personal activities.

July 25th—Morning historical tour of Paris and an afternoon tour of modern Paris.

July 26th—Depart by air for Zurich and travel by deluxe motor coach to Lucerne for check in at the Hotel Grand National. Afternoon free.

July 27th—The morning free in Lucerne with a half-day excursion to the summit of Mt. Pilatus planned for the afternoon. A special party is planned for this evening with drinks at the famous Stadkeller Restaurant, featuring folk music and typical Swiss entertainment.

July 28th—Fly to Rome and the Hotel Mediteraneo. The balance of the day will be at leisure.

July 29th—Sightseeing tours of ancient and modern Rome.

July 30th—Free time in Rome for personal activities.

July 31st—In the afternoon visit Trivoli and the famous Villa D'Este.

August 1st—Return jet flight to New York.

August 1st-7th—Optional tour to Florence, Venice and Berlin.

For reservations or information contact: Mr. Don Blair, Oklahoma State Medical Association, P.O. Box 18696, Oklahoma City, Oklahoma 73118, telephone (area code 405) VI 2-3361. □

Trustees Approve Podiatry Policy Statement

The OSMA Board of Trustees approved a policy statement on podiatry at its October 8th meeting in Oklahoma City. The statement was submitted to the Trustees by Orange Welborn, M.D., in his capacity as chairman of the OSMA Council on Professional and Intervocational Relations. The council had adopted the statement and submitted it for Board of Trustees approval at its meeting on September 24th.

Doctor Welborn explained to the board that Oklahoma laws on podiatry are liberal in comparison with most states and that in this state the podiatrists are self-governed by a board comprised by three podiatrists. There are two requirements for licensing as a podiatrist. These are (1) graduation from a school of podiatry and (2) membership in the state association of podiatry.

In Oklahoma podiatrists are given the right to treat all conditions of the foot (except amputation), although some states allow only local applications and no systemic treatment, Doctor Welborn said.

The policy statement as adopted by the OSMA Board of Trustees is a combination of the AMA, the Joint Commission on Accreditation of Hospitals, and the American Academy of Orthopaedic Surgeons policy positions in regard to podiatry.

The statement as adopted reaffirms the AMA's position that "The practice of podiatry is a valid pursuit and a helpmate to the practice of surgery," and encourages cooperation between M.D.'s and podiatrists in the care of patients.

The position is taken that a hospital staff may vote a podiatrist privileges in his specialty under the jurisdiction of the hospital's department of surgery. However, the podiatrist is not qualified to write the history or physical examination nor check the heart and lungs before an anesthetic.

The statement points out that even though the podiatrist may have privileges, his patients must be admitted to the hospital under a physician's name and, "it is to be remembered a podiatrist can never be a member of the medical staff—he is not an M.D."

The podiatrists' services should "logically be provided in the outpatient department of those hospitals" in which he is permitted to practice. His services should be confined within the scope of the practice of podiatry as authorized by the statutes of the state.

The last paragraph of the official policy statement is the most important and limiting in its effect on poditary. The paragraph reads as follows: "In those hospitals where a podiatrist is permitted to perform surgery as a technician, it is recommended that he be under the direct supervision of a physician. By supervision, it is meant that during the operation, a staff surgeon must be present in the operating room, gowned and scrubbed, as the responsible person."

Other Actions

In considering other proposals brought before them, the board took the following actions:

- The board reaffirmed its support of the proposed Oklahoma Medical Laboratories Act as recommended by the OSMA State Legislative Committee. This act will be submitted to the Oklahoma State Legislature during its next session, convening in January. (The act is explained in detail in another article in this issue to *The Journal.*)
- The OSMA Membership Committee was re-activated on the recommendation of the OSMA Planning Committee, chaired by Doctor Ennis M. Gullatt.
- The planning committee also recommended and the board approved the expansion of the committee to include Oklahoma's AMA delegates to serve as ex-officio members of the committee.
- The committee also recommended that the uncommitted portion of the association's savings of $62,000 be restricted to capital improvements and that the name of the savings account be changed to the "Replacement, Depreciation and Operational Reserve Fund."
- The board also approved a recommendation of the committee to pay the expenses of a group of not more than three state medical association executives to study OSMA operations and prepare recommendations for improvement.
- A recommendation was approved to urge the House of Delegates, at its next meeting, to implement a per diem to be paid regularly to the president of the OSMA. The amount and starting date of the per diem is to be decided by the House of Delegates. A $1,100 dues payment was authorized to be made to the Oklahoma Council for Health Careers. A previously authorized expenditure of $2,500 was not sufficient for the OSMA to meet the dues requirements of the Council for Health Careers. The association's membership is on the basis of $2 per dues paying association member.
- The OSMA Council on Professional and Intervocational Relations offered and the Board accepted a recommendation that all exhibit booths at the annual meeting requested by paramedical personnel should be reviewed by the council before they are accepted.
- A $250 appropriation was authorized for the sponsorship of a statewide nurse-physician conference. The conference will be jointly sponsored by the OSMA and the nurses association. (Additional details on this statewide conference will be found in another article in this *Journal.*)
- The OSMA Committee on Medicine and Religion requested and was given a $600 appropriation to finance a statewide conference on medicine and religion to be held February 2nd-3rd. The conference will be held in cooperation with the Oklahoma Council of Churches. (Plans for this meeting are outlined in another article in this *Journal.*)
- Fifty-year club petitions were approved for M. V. Stanley, M.D., and George H. Miller, M.D., of Tulsa and for F. P. Baker, M.D., of Talihina.
- The board contributed $100 to the special Committee on Legislative

Compensation to help underwrite the cost of research into the committee's current study of compensation and allowances paid to Oklahoma lawmakers. This committee is not a part of the OSMA, however, Mr. Dwight Whelan, OSMA Associate Executive Secretary, is the first vice-chairman of this committee. In a letter to the board, Mr. Whelan pointed out that this contribution would not necessarily constitute an endorsement of the committee's study but would be an invaluable legislative public relations act.

• The board approved an expenditure for the repainting of the exterior of the OSMA Executive Office building in Oklahoma City. □

Medicine and Religion Conference Set For February 2nd-3rd

The OSMA Committee on Medicine and Religion is joining with the Oklahoma Council of Churches in planning a statewide conference for February 2nd-3rd of next year. The theme of the special two-day meeting will be "The Whole Man and the World of Changing Morals."

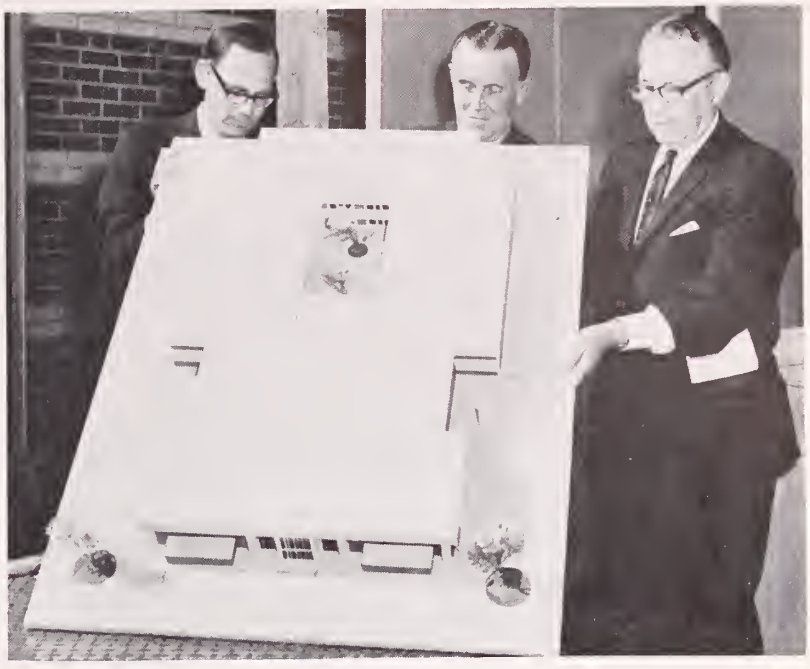
David Belgum, Ph.D., from the University of Iowa's Department of Religion, and the Reverend Doctor Paul B. McCleave, Director of the AMA Department of Medicine and Religion will be the featured speakers for the two-day conference. The meetings will be held in the Center for Christian Renewal in Oklahoma City.

Edward K. Norfleet, M.D., Chairman of the OSMA Committee on Medicine and Religion, stated that the meeting would be open to all physicians and clergymen in the state. He urged OSMA members to bring their ministers to the meeting.

Doctor Norfleet stated, "Physicians and clergymen are beginning to realize more and more that they are often times working with the same problems. They are beginning to team up for treatment of the patient as the whole man."

The meeting will consist of two keynote speakers and panel discussions on the mutual problems faced by physicians and clergymen. □

New OU Basic Science Building Started



Unwrapping a model of the Basic Science Education Building are, from left, Stephen Campbell, president of the Student Council of the OU School of Medicine; OU President George L. Cross, and James L. Dennis, M.D., vice-president for Medical Center affairs.

University of Oklahoma Medical Center personnel and students took part October 17th in "Operation Commencement" ceremonies launching the first building project in the greater Oklahoma Health Center development, the Basic Science Education Building.

Construction of the $4 million structure, home base for medical students, was to start as soon as the east portion of the School of Nursing Building was razed to make way for the new building.

The two and one-half story basic science building will be one of the key new facilities, helping make it possible to increase the enrolment of medical students.

The University of Oklahoma Board of Regents awarded the contract to Blount-Barfell-Dennehy, Inc., Oklahoma City, on their low bid of $3,007,200. Equipment and other costs will raise the price to approximately $4 million. A $2,175,383 grant was received under the federal Health Professions Educational Assistance Act to match state bond funds available for the building.

OU President George L. Cross and James L. Dennis, M.D., vice president for Medical Center affairs, unwrapped the replica and presented it to Stephen Campbell, senior medical student from Tulsa and president of the Student Council.

The presentation was symbolic of the building "belonging to the students."

Robert M. Bird, M.D., associate dean of planning and development, explained the building will have "almost constant use." Carrying out the multidisciplinary laboratory concept, it will have work and study areas assigned to individual students and available to them around the clock. It is designed to permit future expansion for the projected School of Dentistry.

Doctor Dennis also unveiled and explained site plans for the entire Oklahoma Health Center, envisioned as a $185 million, 200-acre complex of public and private institutions. It will rise in and around the present OU Medical Center. Coordinating body for the vast development is the Oklahoma Health Sciences Foundation, a non-profit corporation of leading Oklahoma citizens. □



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Trustees Endorse Medical Laboratories Act

The proposed "Oklahoma Medical Laboratories Act" has been submitted to the Oklahoma Legislative Council for consideration by the 1968 session of the Oklahoma state lawmakers. The bill, in preparation for nearly a year, received final approval and endorsement by the OSMA Board of Trustees during its meeting October 8th in Oklahoma City.

The act, as written, is the result of over 900 man-hours of work by the members of the Interorganizational Committee for Improved Medical Laboratory Performance in Oklahoma. This committee was formed in December of 1966 and consists of representatives from the five medical technologist groups, the OSMA, the Oklahoma Osteopathic Association, the State Hospital Association, the State Health Department, the Oklahoma Association of Pathologists and the American Chemical Society.

This committee was formed when it was discovered by the OSMA Legislative Committee that several technologist groups were planning to introduce spearate licensure bills into the state legislature. According to Raymond F. Hain, M.D., OSMA Legislative Committee Chairman the interorganizational committee was formed to forestall the possibility of adverse "piecemeal legislation" covering areas of mutual interest to the various groups responsible for providing health care, in particular, laboratory medicine.

Doctor Hain said, "In order to arrive at a coherent and concise legislative bill we asked each member organization of the committee to prepare its own licensure act and submit it to the committee as a whole. In all, eight separate bills were received, none of which were acceptable to all groups concerned. The best features of each bill were then taken and formulated into one compromise act. This was written and re-written several times until it was reasonably acceptable to all member groups."

This carefully worked-out compromise "final draft" of the act was then submitted to the governing bodies of each of the member organizations. The OSMA Board of Trustees formally approved this first act during its board meeting in July of this year. Following that approval it was found that certain portions of the bill were probably unconsititutional and a redraft was necessary. This redraft was the one approved and endorsed by the OSMA Board during its October meeting.

The revised bill has now been presented to the Legislative Council's Committee on Health and Welfare, chaired by Senator Ralph Graves of Shawnee. Representative Wiley Sparkman of Grove, Oklahoma, is the Vice-chairman. After consideration and study by the Legislative Council's Committee the bill will be drafted into final form for submission to the 1968 session of the Oklahoma State Legislature. (The OSMA *Journal* and *News* will report the progress of this act through the Oklahoma State Senate and House of Representatives.)

Doctor Hain said there are several reasons for which enactment of this legislation to license medical laboratories and their personnel is imperative at this time. The two most important reasons are (1) the threat of federal regulatory legislation which probably would not be tailored to the specific needs of Oklahoma, and (2) failure to have such licensure laws would establish Oklahoma as a haven for migrant laboratory personnel who fail to meet the standards established by legislation adopted in other states. "The bill, if enacted, as drafted by the Interorganizational Committee should serve as an ounce of prevention before there is need for a pound of cure," Hain said.

In introducing the act, Doctor Hain told the Health and Welfare Committee, "The general objectives of the bill are (1) to establish guidelines and basic principles to ensure quality laboratory medicine to each and every citizen of Oklahoma, (2) to leave, wherever feasible, details of implementation to rules and regulation so that they can more readily be modified as experience dictates and needs require, (3) to provide a medium adaptable to the rapidly changing pattterns of laboratory medicine, (4) to incorporate attainable standards, and (5) to avoid jeopardizing existing needed facilities and personnel."

The act, as presently written, provides that the State Board of Health shall license all medical laboratories and laboratory personnel and, further that it shall prescribe rules and regulations to affect the purposes and provisions of the act. However, it shall do so only with the concurrence of the appropriate Medical Laboratory Advisory Committee.

Two such committees are created by the act. One to advise on all matters relating to licensure of laboratories and rules and regulations relating to their operation. This committee shall be composed of one member each from the medical, osteopathic, pathology, and hospital associations and a non-physician director of a medical laboratory.

The non-physician director must hold an earned doctoral degree from an institution accredited by the North Central Association of Colleges and Universities or an equivalent accreditiation agency. His major subject must be chemical, physical, or biological science and he must be certified by the American Board of Microbiology, the American Board of Clinical Chemistry or some other national accrediting agency acceptable to the State Board of Health in one of the laboratory specialties or he must possess qualifications which are equivalent to those required for such certification.

The second committee shall advise the State Board of Health on all matters relating to licensure of medical laboratory personnel and rules and regulations relating thereto. This committee will consist of five individuals representing the laboratory personnel organizations plus a pathologist, who also serves as the director of an approved school of medical technology and who is a member of the Oklahoma State Association of Pathologists. A member of the Oklahoma Hospital Association in whose hospital there is an approved school of medical technology shall

also be a member of the committee.

This second committee shall also have two ex-officio members. One will be an educator having an earned doctoral degree who holds a professorial rank in a university or college in Oklahoma which offers an educational program for medical laboratory personnel and who is recommended by the Chancellor of Higher Education. The Chief of Laboratory Services of the State Health Department or his designee shall serve as an ex-officio member of both of the committees with no voting privileges except to resolve a tie vote.

All proposed regulations shall be submitted to the approporiate committee for its approval. The act also empowers the committees to propose their own policies and regulations.

The board will work with these two committees to formulate examinations for the licensure of medical personnel, to establish licensees, to establish standards for construction of new or modification of existing laboratories, to establish standards for medical laboratory equipment and to establish standards relating to sanitary conditions within the laboratory and its surroundings, including water supply, sewage, the handling of specimens, and general hygiene which shall insure the protection of the public health. It is also given the authority to inspect the laboratory premises, to require reports by laboratories from time to time, to approve all medical laboratories desiring to employ medical laboratory trainees and to approve all schools of training programs in the state designed to train or educate personnel for service in medical laboratories.

The act also sets out the requirements for the licensure of medical laboratories in the state. The most important provision is that a laboratory cannot be licensed unless its director is a pathologist, or a physician with special qualifications in the performance of tests offered by the laboratory, or a person holding an earned doctoral degree with a chemical, physical, or biological science as his major subject and who is certified by the American Board of Microbiology, the American Board of Clinical Chemistry or some other national accrediting agency acceptable to the State Board of Health.

A medical laboratory directed by someone other than a board certified pathologist shall be limited to perform only those tests by which the director is specially trained and qualified and the license issued shall show those limitations.

The act contains a "grandfather clause" which provides that "every medical laboratory functioning as such on the date of the (final passage) of this act and which has so functioned for a continuous period of at least two years . . . shall be licensed as such upon the effective date of this act or as soon as may be practicable." However, the board may deny the renewal of any license to any laboratory which has not achieved conformity with the act by January of 1973.

Certain classes of medical laboratories are exempted from the provisions of the act. These include laboratories operated by the United States government, those operated and maintained exclusively for research and teaching purposes, so long as their test results are not used directly in the diagnosis or treatment of human disease and any laboratory maintained as a part of a hospital regulated and licensed by the State Board of Health. In this latter, licensure of the hospital constitutes licensure of the hospital laboratory, providing their standards are equivalent to those of laboratories licensed directly by this act.

Laboratories operated by physicians or dentists exclusively for the diagnosis and treatment of their own patients are also exempted so long as they do not regularly receive referred work. However, if three or more duly licensed physicians operate a medical laboratory, one shall be designated director and the medical laboratory will be included under the provisions of the act. In this latter case it shall not be necessary for the "designated director" to possess any of the qualifications outlined for directors of laboratories, taking referred work so long as he is a physician licensed to practice medicine in Oklahoma. In such a case he will be required to employ the services of such qualified consultants as required by the board.

The act also provides for five classes of medical laboratory personnel. These include technologist, specialists, technicians, assistant and trainee. The State Board of Health shall, upon recommendation of the appropriate advisory committee, prescribe minimal qualifications for such personnel.

The board is specifically charged with the creation of a laboratory evaluation and quality control program. As a part of such program, it may require a medical laboratory to analyze test samples and to report on the result of such analysis.

The bill includes such minimum requirements for the acceptance, collection, identification and examination of specimens and how the reports of such examinations are to be used. It further provides for certain administrative remedies to be followed by those persons having some greivance under the act.

If the bill is passed by the state legislature as it is currently written, the licensure requirements will become effective on January 2nd, 1969.

Doctor Hain pointed out that the medical profession should not feel that their present laboratories or personnel are threatened by the act as provisions have been included in the bill itself to prevent this. □

State Nurse-Physician Conference Planned

The OSMA Committee on Nursing, chaired by Joe L. Duer, M.D., Woodward, is working with the Oklahoma Nurses Association to plan a statewide conference of nurses and physicians to be held at Fountainhead Lodge on Lake Eufaula on February 15th-17th. The theme of the meeting will be "Nurse-Physician Collaboration Toward Improved Patient Care."

Attendance at the meeting will be limited to 50 physicians and 50 nurses. The expense of the two-day meeting is being underwritten by the Merck, Sharpe and Dohme postgraduate education program □

Legislative Council Nearing End of Studies

Almost immediately following adjournment of the First Session of the 31st Oklahoma Legislature last May, committees comprising the framework of the interim Legislative Council began meeting in an effort to lend appropriate study to numerous proposals and to have study recommendations ready in time for the opening of the Second Session on January 2nd, 1968.

Most of the items relating to the subjects of medicine and public health are generally assigned for study to the Public Health and Welfare Committee of the Legislative Council. This committee is chaired by Senator Ralph Graves of Shawnee and the vcie-chairman is Representative Wiley Sparkman of Grove. The committee is comprised of 20 members; ten senators and ten representatives.

While the interim Legislative Council cannot enact a law, the studies which they give approval to generally are drafted in bill form and are introduced into the subsequent legislative session.

To date the Public Health and Welfare Committee has been involved in studying the need for new or corrective legislation in eight specific subject categories.

The following are excerpts taken from the October report of the Public Health and Welfare Committee. The position of the Legislative Council appears in italics at the end of each subject item.

Therapeutic Abortions

The committee was requested to review the provisions of Engrossed H. B. 710 which is now pending in the Senate Judiciary Committee. Pursuant to authority granted standing committees by Council rules, we conducted a hearing on this bill and heard comments from its author, Representative Curtis Lawson, Tulsa, official representatives of the State Legislative Committee of the Oklahoma State Medical Association, and others. The medical association presented proposed amendments to the bill, which were termed as being "medically acceptable." The committee, upon condersation, adopted the proposed amendments and recommended their adoption by the Executive Committee.

Generally, the amendments proposed by the State Legislative Committee of the Oklahoma State Medical Association are designed to prevent abuses of a more liberal abortion law. The medical association neither supports nor opposes the bill.

Two of the proposed amendments substitiute the word "abortion" for the word "miscarriage." Another amendment deletes a provision in the bill permitting three "licensed medical practitioners," upon certain findings of fact, to authorize abortions. Instead, the amendment requires that a "duly licensed physician" submit the case history of the woman seeking an abortion to the Committee on Therapeutic Abortion of an officially accredited hospital for its approval. This committee would be appointed by the medical staff of a hospital accredited by the Joint Commission on Accreditation of Hospitals or the Committee on Hospitals of the American Osteopathic Association. It would be composed of not less than three members of the active staff of such hospital.

The next amendment deletes Section 4 of Engrossed H. B. 710 which authorizes emergency abortions. Physicians feel that there are no indications for emergency abortions. The committee was told that if a patient were bleeding, for example, the physician then would be treating a threatened of incomplete abortion, in which case it would not apply to Section 4. If this section is not deleted, we were told, it will tend to encourage abuse by aborting in places other than a qualified well-equipped hospital by perhaps unscrupulous practitioners.

Another amendment deletes the language of Section 5 of Engrossed H. B. 710 providing that an abortion performed on the ground of rape shall require the certificate of a licensed medical practitioner consulted by the victim within 48 hours of the alleged assault that there was then medical evidence of sexual assault. We propose to substitute language providing that in cases of rape or incest, information must be obtained from the district attorney to the attending physician that there is probably cause to believe that the alleged violation occurred.

Last, we propose that the bill be amended to provide that any person receiving an abortion must be an Oklahoma resident. This amendment, of course, is desgned to prevent Oklahoma from becoming an abortion "mill" if the legislation should become law.

The Executive Committee of the Legislative Council which met in Tulsa on September 8th adopted in toto all proposed amendments to the abortion bill presented by the Oklahoma State Medical Association and approved by the Public Health and Welfare Committee of the Legislative Council.

Geriatric and Non-Mentally Ill Persons

The committee conducted a lengthy hearing on the subject of "grouping geriatric and other non-mentally ill persons with those suffering from mental illness in nursing homes" and received testimony from the State Health Department, the State Mental Health Department, the State Department of Public Welfare, and the State Nursing Home Association.

This proposal originated because of a concern for the welfare of aged patients in the nursing homes of this state. Increasingly, during recent years, persons afflicted with varying degrees of mental illness have been placed in nursing homes. Several years ago the Department of Public Welfare began the policy of placing certain of its aged institutional patients in nursing homes throughout the state in order to provide openings for younger patients. Likewise, aged patients have been transferred from the state mental hospitals to nursing homes. These transfers are made with the knowledge of and prior permission from the affected families and guardians. Testimony was given that upon request or determination of the necessity, such persons are returned to the state institutions. Even when transferred to a nursing home, they remain on an "outpatient" status at the institution from which they have been transferred. Acute or chronic mental cases are

not placed in nursing homes. Only those patients who are infirm and/or have physical abnormalities requiring home or nursing care are transferred.

The State Health Department recently conducted a survey of the 455 licensed nursing homes to determine the number of patients who were former patients of mental hospitals and/or homes for the mentally retarded. Four hundred and eleven homes responded and reported 3,337 such patients.

The Legislative Council's committee was advised that the housing of ex-mental hospital patients, the mentally retarded and geriatric patients in the same nursing home could present serious problems, if done without concern for such factors as (1) the availability of properly trained, competent, licensed personnel in numbers adequate to meet the needs of all patients; (2) specific nursing home admission policies and strict adherence thereto in order to assure proper patient selection; (3) provision of adequate physical facilities to meet general and special patient needs; and (4) the formulation of guidelines to be followed in insuring a balanced ratio of patients.

The legislators were told an effort is being made by the appropriate state agencies and the operators of nursing homes to minimize problems which could arise from this "mixing" of patients in our nursing homes. The Mental Health Department and the Public Welfare Department are assisting nursing home operators in training nursing home personnel in the care and treatment of ex-mental hospital patients. Oklahoma leads the nation in training nursing home operators in "remotivation therapy," with 300 persons having taken such training at Central State Hospital.

Some of the authorities feel that a "mix" of patients is of benefit to the ex-mental or retarded patient. Others feel that mixing patients has an adverse effect on the well-oriented geriatric patient. Although problems may arise in the future, we believe the affected state agencies, as well as the nursing home operators, are alert to the situation and through continued cooperation can resolve such matters without the need of legislative action.

Children's Detention Centers

Judge Powell of Chandler appeared before the committee to ask consideration of legislation authorizing the construction of children's detention homes in each county of the state or permitting two or more counties to cooperate in establishing and maintaining such centers. At the present time, only Oklahoma and Tulsa counties are authorized to construct and operate such juvenile centers.

As a possible approach to effectuating this proposal, it has been suggested that legislation be enacted authorizing a county or groups of counties to issue bonds for the construction of juvenile detention homes and to levy ad valorem taxes for their maintenance and operation. Alternatively, it was suggested that the financing of such centers be made a responsibility of the State Department of Public Welfare through the state sales tax.

The purpose of these centers would be to provide a suitable place for holding juvenile and dependent and neglected children until a proper disposition is made of their cases. The committee was advised that in order to provide adequate financing for such centers, a population base of 200,000-250,000 would be necessary. It was estimated that the annual operating costs of such a center would be in the range of $100,000.00-$200,000.00.

The Department of Public Welfare has expressed general agreement with the basic idea of such children's detention centers. Obviously, more specific information regarding the costs involved must be obtained before any determination can be made regarding the financing of such centers through sales tax revenues. Also, many other factors must be considered.

The committee has no recommendation on this matter at the present time.

Alcoholism

This proposal, requesting a study of the subject of alcoholism, the treatment thereof and the laws pertaining thereto, has been considered at some length by the committee. Representatives of the State Department of Health, the State Department of Mental Health, and private organizations concerned with alcoholism have appeared before the committee to present their views. Those who testified before the committee were in agreement that alcoholism poses a serious problem. There is no complete agreement, however, regarding measures to solve this problem. The committee urged to restrict alcoholic consumption by eliminating advertising of alcoholic advertising of alcoholic beverages, by providing of local option, and by stricter enforcement of existing laws and regulations. Others concentrating on the rehabilitation aspect, stressed the need for greater community rehabilitative efforts to provide continued treatment for alcoholics after they have undergone institutional treatment. We have learned that, following amendment of the law in 1965 to authorize admission of alcoholics to the state's mental hospitals, alcoholism has become the most common cause of admission to our mental hospitals. "Detoxification units" have been established at all mental hospitals.

We have learned that alcoholism is the fourth-ranked national health problem, and that it is a growing problem in Oklahoma. It is recognized as a disease which is manifest by a continuing physical dependency on beverage alcohol. There is no agreement on how to best attack this increasing health and social problem.

The last statewide organized examination of alcoholism was undertaken in 1963-1964 by a subcommittee of the Mental Health Planning Committee organized by the State Health Department. This subcommittee made some valuable recommendations, some of which have been implemented by legislation or administrative action. During the adminstration of Governor Bellmon, a Governor's Committee on Alcoholism was appointed. *We have recommended that this committee be reactivated and continue its study, with the ob-*

ject of making recommendations to our committee during this interim period as to ways and means the Legislature can assist in the effort to combat alcoholism.

Nursing Home for Mentally Ill Veterans

Senate Bill No. 163 of the First Session,. 31st Legislature provided for an appropriation of $100,000.00 from the General Revenue Fund to the War Veterans Commission for the planning, construction, furnishing and equipping of a nursing care ward at the State War Veterans' Facility in Norman. This bill died in the General Conference Committee on Appropriations.

This appropriation would have provided the means for the establishment of a much-needed 50-bed nursing care addition to the veterans' facility at Norman for the care and treatment of mentally ill veterans.

The Public Health and Welfare Committee recommends that the next session of the Legislature grant the requested $100,000.00 appropriation. The cost of the proposed facility will be $417,000.00. The Veterans Administration has agreed to provide 50 per cent of this amount.

Although the Veterans Administration has been in the process for several years of opening 4,000 nursing care beds in veterans' facilities throughout the country, only 1,100 such beds have been opened, none of which are in Oklahoma. With 33,000 World War I veterans living in the state, and with only a limited number of nursing care beds at the Sulphur and Norman Veterans' facilities, the proposed 50-bed addition could be filled immediately and a need would continue to exist.

Medical Laboratories and Personnel

The Public Health and Welfare Committee met on October 18th to to consider the proposed Medical Laboratory Licensing Act which was prepared by the Interorganizational Committee for Improved Laboratory Performance in Oklahoma — a group created at the request of the Oklahoma State Medical Association. A comprehensive article covering this subject is on page 639 of this issue of the *Journal*. □

Annual Meeting Plans Almost Complete

In preparation for the 1968 Annual Meeting of the Oklahoma State Medical Association, four specialty groups have completed the arrangements for their scientific sections. These include EENT, General Practice, Psychiatry and Radiology. The remainder of the scientific specialty section programs, eleven in all, are expected to be complete by the middle of November.

The three-day annual meeting will be held in the Skirvin Hotel, Oklahoma City, May 16th-17th-18th of next year. The meeting will be highlighted by three special social functions for physicians and their wives.

These include a champagne party, Thursday evening, in the Persian Room of the Skirvin Tower Hotel. The Friday night affair will feature entertainment from the famous Gaslight Club in Chicago and Saturday evening, May 18th, will be the annual President's Inaugural Dinner-Dance. This will be preceded by a poolside cocktail party in the Skirvin's Sun Suite Club.

The business portion of the annual meeting will include a meeting of the OSMA Board of Trustees Thursday afternoon, May 16th, and a meeting of the full House of Delegates, Friday and Saturday mornings, May 17th and 18th.

The specialty scientific sessions will include programs on cardiovascular disease, eye, ear, nose and throat, general practice, internal medicine, obstetrics-gynecology, orthopedics, pediatrics, psychiatry, radiology, surgery, and urology.

Doctor Richard B. Price, Chairman of the Annual Meeting Committee, stated that the 1968 OSMA meeting should be the biggest and best ever. "We have had excellent cooperation from all the specialty societies in preparing the scientific portion of the program. Requests for exhibit space are flowing into the OSMA office daily."

The Friday evening "Gaslight Party" will be enlivened by the presence of four beautiful flappers and five great jazz musicians who will fly to Oklahoma City from the Gaslight Club in Chicago. The girls will sing and dance to the nostalgic fire and flash of the roaring twenties Dixieland music. Some of the outstanding moments will occur when members of the audience are brought to the stage and taught by the girls to do the Charleston and Twist in the true gaslight fashion.

During the evening two lifetime memberships in the international Gaslight Club will be given away to lucky physicians. □

Ten-Year Medical School Expansion Outlined

In recent discussions with a special committee of the Oklahoma State Legislative Council, Doctor James L. Dennis, Vice-President and Dean of the OU Medical School, explained the school's proposed ten-year physical plan for redevelopment. The plan, tentatively slated for completion in 1976, would cost an estimated $80,950,000.

The plan was outlined before the Special Committee on Capital Needs of State Institutions chaired by Senator Bryce Baggett of Oklahoma City. In the discussions, the dean pointed out that two of the major elements of the plan have already been funded by a 1963 state bond issue. These are the first addition of a new University Hospital and a basic science medical education building. He told the committee that the completion of these two projects will allow the OU Medical School to enroll 100 additional medical students. In outlining the ten-year plan, Doctor Dennis commented on the shortage of physicians and other paramedical personnel in Oklahoma. He pointed out that nationally there is one physician for every 641 persons but that in Oklahoma the ratio is one to 1,171. The state would require an additional 1,900 physicians to meet the national average. The expected increase in demands for physicians' services will make this shortage even more apparent by the year 1975.

Other figures cited by the doctor include the following:

- In Oklahoma there are eight auxiliary health personnel for every phy-

sician while nationally the ratio is one to 12. This would mean a deficit of 25,000 health related workers in the state at this time.

- At the present time there are 173 registered nurses in Oklahoma for every 100,000 people. To maintain the present ratio the state will require 1,594 additional nurses by 1970. To meet the national average by 1970 would require an additional 4,886 nurses.
- In Oklahoma there are 300 trained social workers for a ratio of one to 8,000 population. To reach the national standard of one to 1,500 population would require an additional 1,330 trained social workers today.
- There is a shortage of certified dental assistants in the state. At the present time we have 111 and need 700 additional now.
- The only health worker category in which Oklahoma excels is that of dieticians. Oklahoma's 230 certified dieticians is nearly double the national average.

The doctor also reported on the status of dental manpower in Oklahoma and pointed out the Oklahoma has 910 dentists in active practice at the present time. This is a ratio of one dentist for every 2,725 persons. The national average is one to 1,714 persons or a deficit of 1,011 dentists compared to the national average. If Oklahoma started graduating 100 dental students per year it would take ten years to fill this gap.

Doctor Dennis told the committee that physicians are concentrated at present in six counties of the state's 77 counties. These six counties contain 63.9 per cent of the state's licensed physicians and 45.6 per cent of the state's total population, but account for only 5.8 per cent of the state's land area. Twenty-three counties in Oklahoma have fewer than five active physicians and out of the 54 physicians practicing in these counties, ten are 65 years of age or older and 18 are in the 45 to 64 age bracket.

Doctor Dennis noted that the 1967 class included 109 enrollees, selected from well over 500 applicants. He said the 109 were accepted, but that present classroom facilities are limited and that some students must sit in the doorways on folding chairs.

He explained that the construction of the new basic science building will reduce the overcrowding and allow the medical school to increase its enrollment by 25 students per class.

Both Doctor Dennis and Doctor Robert M. Bird, Associate Dean for Planning and Development of the OU Medical School, pointed out that expansion in the training facilities, not only for physicians, but also for nurses and allied health personnel is imperative.

In a special report prepared for the committee the three phases of the ten-year program were outlined as follows:

Phase I would include a new school of nursing, student union, auditorium and general facilities, remodeling and renovation of vacated spaces, school for allied health manpower, ambulatory medical clinics, land acquisitions, school of public health, school of dentistry, dental clinics, rehabilitation and chronic disease centers, administration facilities, and graduate education center. The total cost of Phase I would be $31,900,000. Of this amount the federal government's share would be $15,270,000 and the state's share $14,380,000 with $2,250,000 being supplied from outside sources such as donations and endowments.

Phase II of the plan includes a 200-bed addition and a renovation of the University Hospital, the basic science building, faculty offices, and resource facilities. Phase II is estimated to cost $23,550,000.

Phase III of the project includes a $12 million institute of mental health, a $9,500,000 new children's hospital, and a $4 million animal and veterinary facility for a total cost of $25,500,000.

The total cost of all three phases will be $80,950,000. Of this amount the estimated federal government's share will be $36,930,000 with the state's share estimated at $40,270,000. An additional $3,750,000 will be required from outside sources. □

Medical Center Opens Coronary Care Unit

A coronary care unit offering heart patients the most modern intensive treatment facilities opened this fall at University Hospital.

Patients will be monitored around the clock by electronic equipment and specially-trained doctors and nurses.

The unit can accommodate four patients with myocardial infarction, arrhythmias, or other acute or suspected heart conditions.

The "Rolls Royce" of the equipment is a custom-made, eight-channel physiological monitor capable of monitoring and recording all of a patient's vital signs. It can keep check simultaneously on the electrocardiogram, electroencephalogram, respiratory rate, temperature, pulse and blood pressure.

The self-contained coronary care unit is located on a refurbished general medical service with accommodations for 24 patients in eight private and eight semi-private rooms.

Remodeling of the area provided a new nurses' station and physicians' chart room, two utility areas and central air conditioning. Hall ceilings were lowered and modern lighting installed.

In the heart unit, an individual portable monitor with recorder is located at each of the four beds and connected to an oscilloscope at bedside and also at the nurses' station so that EKG changes can be instantly detected. A defibrillator also is available at each bed for emergency treatment.

In addition to the immediate benefits to patients, the unit will be an important part of the medical teaching program, and research to improve methods of patient care will be based upon data from the electronic devices.

The new facility—and the entire medical service of which it is a part—will remain in the present building after completion of the first unit of a new University Hospital, scheduled for construction next year. The first phase of the new hospital project is designed primarily for surgery and gynecology-obstetrics. □

AMA To Feature Program for Practitioners

A scientific program especially designed for the physician in practice again will be featured at the AMA's Clinical Convention, to be held in Houston November 26th-29th.

The four-day meeting will include scientific sessions on 18 major topics, four postgraduate courses, breakfast roundtable conferences, closed-circuit television and medical motion picture programs, and more than 150 scientific exhibits.

Of special interest are the postgraduate courses, expanded to four topics: Fluid and Electrolyte Balance, Oncology, Cardiovascular Disease, and Obstetrics and Gynecology. Each course will consist of three half-day sessions featuring outstanding teachers.

Topics at the general scientific sessions include: aerospacé medicine, antibiotics, arthritis, cancer, cardiovascular medicine, cardiovascular surgery, dermatology, endocrinology, gastroenterology, general surgery, genitourinary treatment, geriatrics, obstetrics and gynecology, ophthalmology, otolaryngology, pediatrics, and psychiatry. There also will be a session on "new cares" featuring a discussion of legal and social problems now faced by the physician.

Breakfast Roundtable Conferences will discuss (1) "Indications and Limitation of Uses of Antibiotics," (2) "The Moral and Ethical Aspects of Caring for the Dying Patient," (3) "Management of Cerebrovascular Insufficiency," and (4) "Adolescence, Age of Rebellion; Some Related Psychiatric Aspects." Numbers 1 and 2 will be Tuesday morning, November 28th; numbers 3 and 4 will be Wednesday morning, November 29th. Tickets will be $3 each.

An outstanding program of closed-circuit color television and more than 25 medical motion pictures will be presented. Live, color television broadcasts of surgery and discussions from Houston's Hermann Hospital will be seen on a large screen in Astro Hall. Medical motion pictures will include three or four premier showings, plus several films that were well received at the AMA annual convention last June.

The Ninth National Conference on the Medical Aspects of Sports will be Sunday, November 26th, at the Hotel America in conjunction with the Clinical Convention. Sponsored by the AMA Committee on the Medical Aspects of Sports, the meeting will feature morning, afternoon, and evening discussions of problems faced by team physicians at all levels of athletic competition. □

DEATHS

C. W. TEDROWE, M.D.
1872-1967

A pioneer Oklahoma physician died in Woodward October 24th, 1967. C. W. Tedrowe, M.D., 95-year-old, Woodward general practitioner, was a native of Dayton, Ohio.

Doctor Tedrowe graduated from the University of Medicine, Indianapolis in 1898. After practicing in several Oklahoma towns including Braman, Tryon, Shawnee, Cheyenne, Elk City and Enid, he established his practice in Woodward.

He had received dual honors from the Oklahoma State Medical Association. A Fifty Year Pin was presented for his long years of practice and in 1952, he was presented a Life Membership in recognition of his service to his profession and humanity.

CHARLES W. ROBERTSON, M.D.
1902-1967

A Chandler physician for the past 35 years died in Oklahoma City October 22nd, 1967.

Doctor Robertson graduated from the University of Oklahoma School of Medicine in 1928. Following postgraduate training in Boston, Chicago and Ann Arbor, he established his general practice in Chandler.

BRUNEL D. FARIS, M.D.
1901-1967

An Oklahoma City obstitrician and gynecologist, Brunel D. Faris, M.D., died October 16th in Oklahoma City. Doctor Faris graduated from the University of Oklahoma School of Medicine in 1927, where he became an Associate Professor of Obstetrics. This was in addition to his private practice in Oklahoma City. □



Student AMA Entertained

The annual OSMA sponsored Student AMA banquet was held Friday, November 3rd, in the Skirvin Hotel Convention Center, Oklahoma City. Nearly 400 O.U. Medical School students and their dates heard Malcom Phelps, M.D., AMA Vice-President speak on "What Medical Students Should Expect in Vietnam." The state association was represented by its President and President-Elect, Maxwell A. Johnson, M.D., and Scott Hendren, M.D., and several members of the Board of Trustees and their wives.

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FOR SALE: American Optical Binocular Microscope, three power magnification, changeable lenses, cabinet and all original attachments. Approximately seven years old, excellent condition, cash price $150.00. Contact J. Hoyle Carlock, M.D., Ardmoreite Building, Ardmore, Oklahoma 73401.

WANTED: EXPOSED X-RAY FILM FOR SALVAGE. What have you? Write today! Murray, 3305 Bryan, Dallas, Texas 75204.

PHYSICIANS NEEDED in Enid, Oklahoma. Due to accidental death of partner, Enid Clinic needs a general surgeon immediately. Office space available in relatively new clinic building adjacent to Enid General Hospital. Opportunity to become stockholder in clinic. Also needed: General practitioner, ophthalmologist, ENT, obstetrician-gynecologist, urologist. Excellent city for practice, professional associations, and living. Contact C. J. Roberts, M.D., c/o Enid Clinic, 617 South Quincy, Enid, Oklahoma 73701.

IMMEDIATE OPENING for licensed G.P. or Internist. Medical Director for Clinical Pharmacology Unit and institutional health service located at McAlester, Oklahoma. Must be able to undertake overall administration of medical department including a small physician staff. Opportunity for medical school staff appointment. Vacation, sick leave and other fringe benefits. Begin $24,800. Contact John P. Colmore, M.D., University of Oklahoma Medical Center, 800 N.E. 13th Street, Oklahoma City. 405 CE 5-9421, extension 351.

FOR SALE: Good 200 MA Standex X-ray with all accessories, Ritter table, Burdick EK-III, full complement of office equipment. Also very good practice opportunity for GP or Internist at this location. Contact J. W. Sullivan, M.D., P.O. Box 1506, Shawnee, Oklahoma. BR 3-5020.

PICKER X-RAY machine, minus fluoroscope, with refrigerated developer, $750.00 or best offer. May be seen in storage at General Transfer and Storage warehouse, Oklahoma City. Contact W.W. Moore, M.D., 6160 South Yale, Tulsa Oklahoma. Phone NA 7-7200 or RI 3-5778.

A VERY ATTRACTIVE practice opportunity exists for board certified or eligible physicians in the fields of internal medicine, urology, orthopedics and opthalmology. A rewarding medical practice is available to the associate who desires to be in a multi-specialty group. Inquiries are confidential and should be directed to Doctor Robert E. Herndon, Chickasha Clinic, Chickasha, Oklahoma.

WANTED: General surgeon for suburb of large metropolitan area in northeast Oklahoma to associate with two busy general practitioners. Contact Key P, The Journal, Oklahoma State Medical Association, P.O. Box 18696, Oklahoma City 73118.

WANTED: General practitioner in small community with modern medical facilities. This is a good type practice. Beginning salary between $20,000 to $25,000 depending upon qualifications; additional salary available for special qualifications. Contact Loyd G. Williams, M.D., Wetumka, Oklahoma. □

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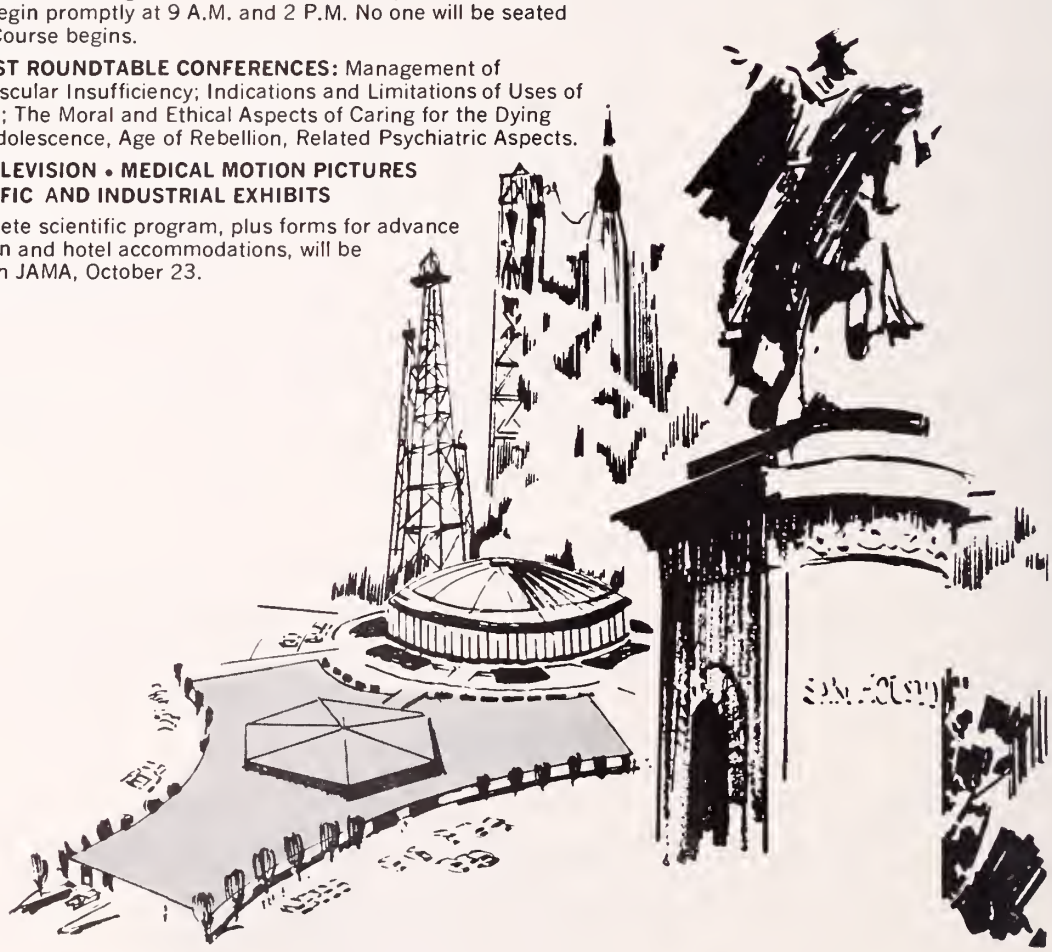
SCIENTIFIC SESSIONS: Cardiovascular Disease; Cardiovascular Surgery; New Cares; Ophthalmology; Geriatrics; Arthritis; Gastroenterology; Cancer; Antibiotics; Endocrinology; General Surgery; Dermatology; Aerospace Medicine; Obstetrics and Gynecology; Psychiatry; Pediatrics; Genitourinary Diseases; and Otolaryngology.

POSTGRADUATE COURSES: Fluid and Electrolyte Balance; Oncology; Cardiovascular Disease; and Obstetrics and Gynecology. Register for these Courses on arrival in Houston at the PG Course Registration booth adjacent to the General Registration area. There is no charge for the Courses, but registration is limited to 200 per Course. The Courses begin promptly at 9 A.M. and 2 P.M. No one will be seated after the Course begins.

BREAKFAST ROUNDTABLE CONFERENCES: Management of Cerebrovascular Insufficiency; Indications and Limitations of Uses of Antibiotics; The Moral and Ethical Aspects of Caring for the Dying Patient; Adolescence, Age of Rebellion, Related Psychiatric Aspects.

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Precautions: The patient should be advised not to drive a car or operate dangerous machinery if drowsiness occurs. Use with caution in patients with hypertension, heart disease, diabetes or thyrotoxicosis.

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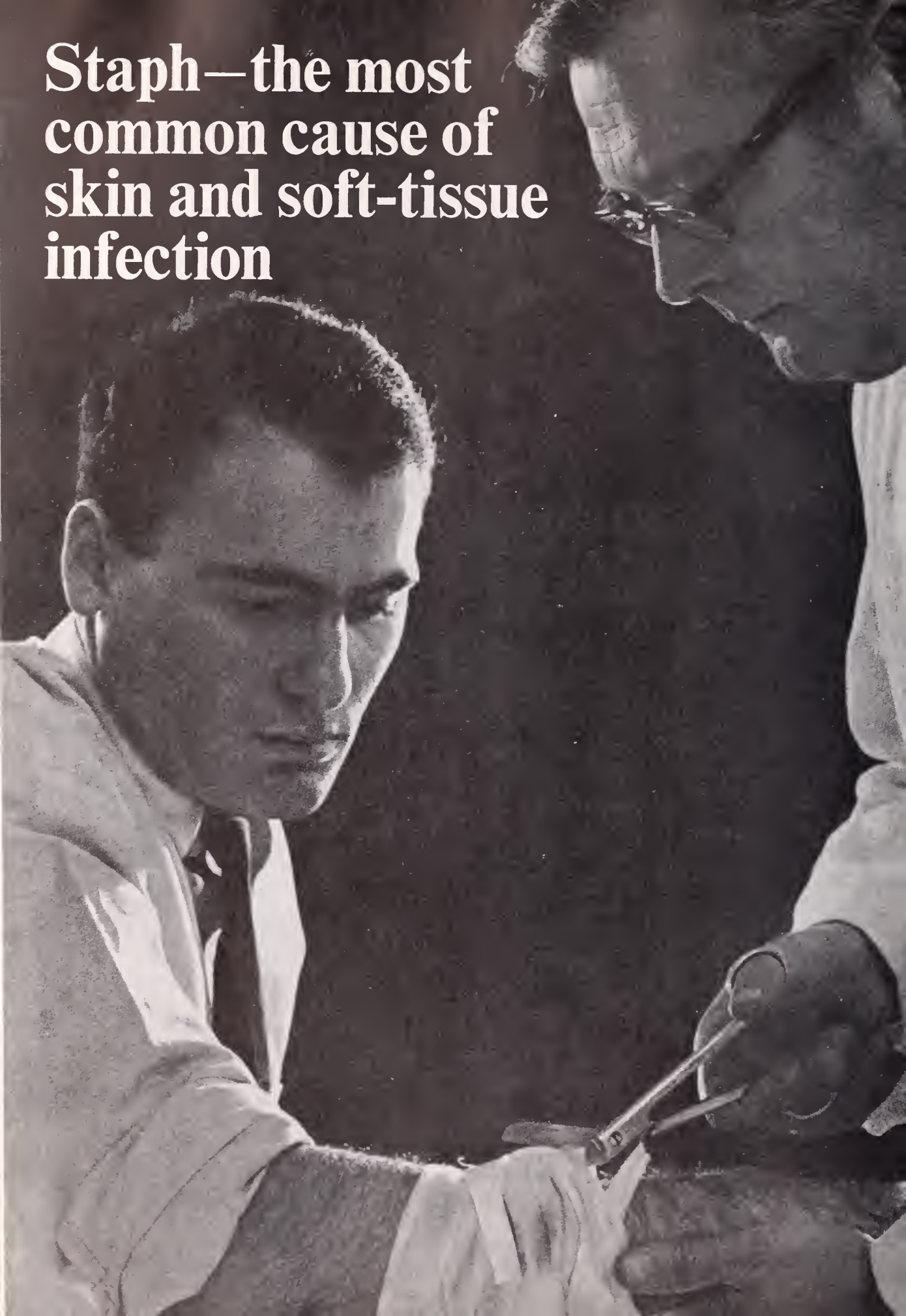


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Clinically proven. There is a high correlation between these *in vitro* findings and clinical results. Of 610 patients treated with Prostaphlin (sodium oxacillin), 89.8% were reported cured or improved, including those with staph infections resistant to penicillin G.[2] And since resistance does not appear to develop *in vivo,* therapy with oxacillin can be extended when necessary.

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PRESCRIBING INFORMATION: For complete information, consult Official Package Circular. *Indications:* Infections caused by Staphylococci, particularly those due to penicillin G-resistant Staphylococci. *Contraindications:* A history of severe allergic reactions to penicillin. *Precautions:* Typical penicillin-allergic reactions may occur. Safety for use in pregnancy and premature infants is not established. Because of limited experience, use cautiously and evaluate organ system function frequently in neonates. Mycotic or bacterial superinfections may occur. Assess renal, hematopoietic and hepatic function intermittently during long-term therapy. *Adverse Reactions:* Skin rashes, pruritus, urticaria, eosinophilia, nausea, vomiting, diarrhea, fever and occasional anaphylaxis. Rare cases of reversible hepatocellular dysfunction have occurred. Moderate SGOT elevations have been noted. Thrombophlebitis has occurred occasionally during intravenous therapy and leukopenia was noted in two cases. *Usual Oral Dosage:* Adults: 500 mg. *q.*4 or *q.*6*h.* Children: 50 mg./Kg./day. *Usual Parenteral Dosage:* Adults: 250-500 mg. *q.*4 or *q.*6*h.* Children: 50 mg./Kg./day. Treat beta-hemolytic streptococcal infections for at least 10 days. Give oral drug 1 to 2 hours before meals. *Supplied:* Capsules—250 and 500 mg. in bottles of 48. Injectable—250 mg., 500 mg., and 1 Gm. dry filled vial for I.M./I.V. use. For Oral Solution—100 ml. bottle, 250 mg./5 ml. when reconstituted. **A.H.F.S. CATEGORY 8:12.16**

References: 1. Abstracted from *Antibiotic Sensitivity of Staphylococci Studied from November 1962 through August 1965,* reported by Griffith, L.J., Staphylococcus Reference Laboratory, V.A. Hospital, Batavia, N.Y. 2. Data on file, Bristol Laboratories.

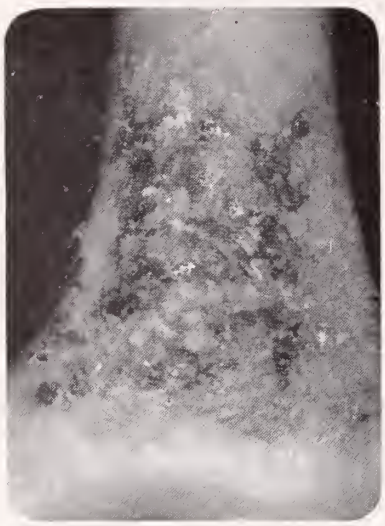
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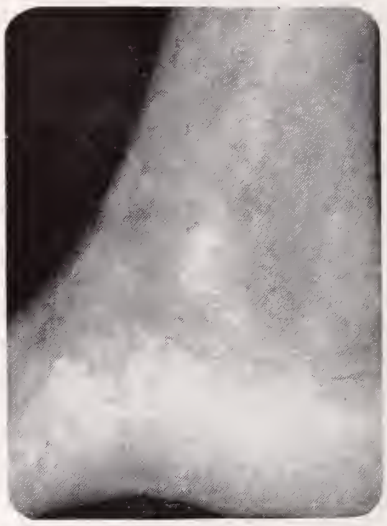
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ARISTOCORT® Triamcinolone Acetonide Topicals have proved exceptionally effective in the control of various forms of eczema: allergic, atopic, nummular, psoriatic, and mycotic.

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Administration and Dosage: Apply sparingly to the affected area 3 or 4 times daily. Some cases of psoriasis may be more effectively treated if the 0.1% Cream or Ointment is applied under an occlusive dressing.

Contraindications: Tuberculosis of the skin, herpes simplex, chicken pox and vaccinia.

Precautions and Side Effects: Do not use in the eyes or in the ear (if drum is perforated). A few individuals react unfavorably under certain conditions. If side effects are encountered, the drug should be discontinued and appropriate measures taken. Use on infected areas should be attended with caution and observation, bearing in mind the potential spreading of infection and the advisability of discontinuing therapy and/or initiating antibacterial measures. Generalized dermatological conditions may require systemic corticosteroid therapy. Steroid therapy, although responsible for remissions of dermatoses, especially of allergic origin cannot be expected to prevent recurrence. The use over extensive body areas, with or without occlusive nonpermeable dressings, may result in systemic absorption. Appropriate precautions should be taken. When occlusive nonpermeable dressings are used, miliaria, folliculitis and pyodermas will sometimes develop. Localized atrophy and striae have been reported with the use of steroids by the occlusive technique. When occlusive nonpermeable dressings are used, the physician should be aware of the hazards of suffocation and flammability. The safety of use on pregnant patients has not been firmly established. Thus, do not use in large amounts or for long periods of time on pregnant patients.

Available in 5 Gm. and 15 Gm. tubes and ½ lb. jars.

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Aristocort® Topical Ointment 0.1% and Cream 0.1%, 0.5%
Triamcinolone Acetonide
Also available in foam form.

Lederle LEDERLE LABORATORIES, A Division of American Cyanamid Company, Pearl River, New York

406-6

Night Leg Cramps . . . Unwelcome Bedfellow

In Diabetes[1], Arthritis[2], and Peripheral Vascular Disorders[2]



now . . . specific therapy for night leg cramps

Walker

QUINAMM™

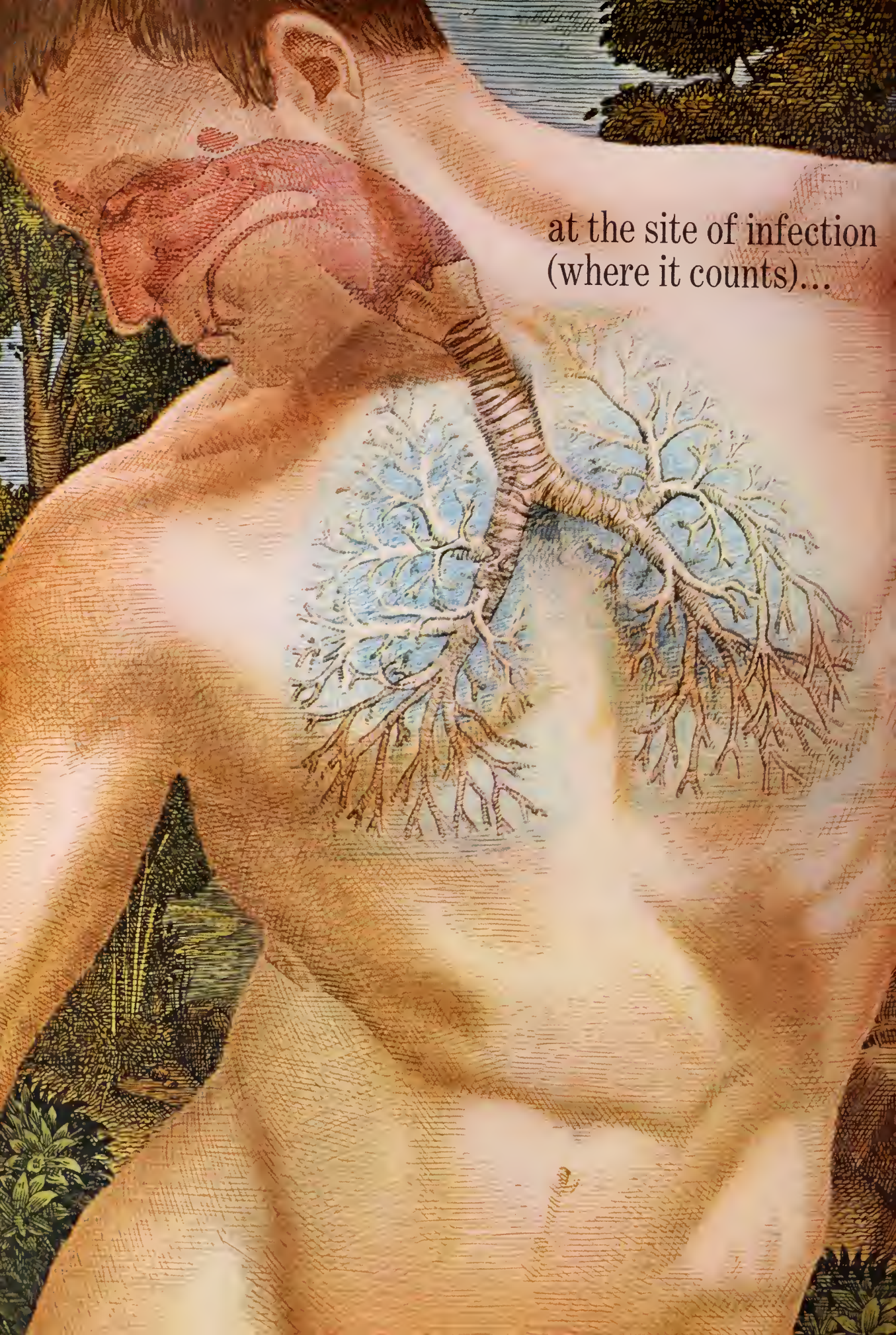
Consistently effective, QUINAMM provided complete relief in 94% of 200 patients studied, many of whom were severe cases refractory to other medication.[3] Your prescription for one tablet at bedtime often controls painful night cramps with the initial dose . . . helps restore restful sleep.

THE NATIONAL DRUG COMPANY
DIVISION OF RICHARDSON MERRELL INC
PHILADELPHIA, PENNSYLVANIA 19144

Prescribing Information: Composition: Each white, beveled, compressed tablet contains: Quinine Sulfate 260 mg. and Aminophylline 195 mg. **Contraindication:** QUINAMM is contraindicated in pregnancy because of its quinine content. **Precautions:** Aminophylline may produce intestinal cramps in some instances, and quinine may produce symptoms of cinchonism, such as tinnitus, dizziness, and gastrointestinal disturbance. Discontinue use if ringing in the ears, deafness, skin rash, or visual disturbances occur. **Dosage:** One tablet upon retiring. Where necessary, dosage may be increased to one tablet following the evening meal and one tablet upon retiring. **Supplied:** Battles of 100 and 500 tablets.

References: 1. Shuman, C.: Am. J. Med. Sci., 225:54, 1953. 2. Perchuk, E., et al.: Angiology, 12:102, 1961. 3. Rawls, W., et al.: Med. Times, 87:818, 1959.

6/67 Q-706A


at the site of infection
(where it counts)...

Ilosone® provides more antibacterial activity than any other oral erythromycin

Acid stable, better absorbed... Ilosone produces faster, higher, more prolonged blood levels, even in the presence of food[1-3]

Because it is the most active form of oral erythromycin, Ilosone can help assure consistently greater antibacterial activity at the site of infection. Ilosone produces peak antibacterial blood levels two to four times those of other erythromycin preparations.[1,2] Not only are these levels attained earlier, but they are maintained for much longer periods. Even the presence of food does not seem to affect the activity of Ilosone.[1,3]

In the treatment of patients with bacterial infections susceptible to erythromycin, Ilosone has compiled an excellent therapeutic record. Since it exerts its greatest activity against gram-positive organisms, it is particularly useful in common respiratory and soft-tissue bacterial infections. Ilosone kills—not merely inhibits—streptococci, pneumococci, and more strains of staphylococci than any other macrolide antibiotic. This bactericidal action, coupled with the high antibacterial levels attained, makes Ilosone especially valuable in patients with low host resistance, such as infants, debilitated individuals, and diabetics.

Ilosone has shown no cross-resistance with penicillin and may be effective against organisms that have become resistant to that agent. Despite its high antibacterial activity, Ilosone has demonstrated a low incidence of side reactions. Blood dyscrasias, ototoxicity, and tooth staining have not been observed. Infrequent cases of drug idiosyncrasy, manifested by a cholestatic jaundice, have occurred, but there have been no known definite residual effects.

Now available:
New! Ready-mixed Ilosone Liquid 125! (Contains erythromycin estolate equivalent to 125 mg. erythromycin base per 5-cc. teaspoonful.)

701464

Ilosone®
Erythromycin Estolate

Lilly

(See next page for prescribing information.)

Ilosone®/the most active oral form of erythromycin

Description: Ilosone is the most active form of oral erythromycin that has been developed. Because it is stable in acid, well absorbed, and excreted in lesser amounts in the bile, it provides faster, higher, and longer-lasting levels of antibacterial activity (ABA) in the serum, even when taken with food, than do comparable doses of erythromycin.

Indications: Ilosone is indicated in infections caused by micro-organisms sensitive to its action—especially staphylococci, hemolytic streptococci, and pneumococci.

It has been effective in streptococcus infections, particularly acute bacterial pharyngitis and tonsillitis; staphylococcus disease, including soft-tissue infections, furunculosis, abscesses, cellulitis, carbuncles, and wound infections; pneumococcus pneumonia and acute bronchitis with pneumococci on culture, bronchopneumonia, and otitis media.

In serious staphylococcus infections, erythromycin preparations should be used only in combination therapy with other antimicrobial agents; surgical procedures should be performed when indicated, and large doses of the antimicrobial agents should be employed.

Penicillin is the drug of choice for syphilis and gonorrhea, but Ilosone in multiple 500-mg. doses has been useful in patients with a history of penicillin allergy. Also, other infections due to susceptible bacteria in patients hypersensitive to penicillin or other antibiotics may be considered for treatment with Ilosone.

Contraindications: Known history of sensitivity to this drug; preexisting liver disease or dysfunction.

Adverse Reactions: Hepatic dysfunction with or without clinical jaundice has been reported infrequently. Changes in liver function tests indicative of intrahepatic cholestasis appear to be the result of individual idiosyncrasy. Findings subsided when treatment was discontinued. Occasionally, symptoms simulated extrahepatic obstructive jaundice or the colic of biliary tract disease.

When jaundice appeared to be related to use of the drug, laboratory findings were characterized by increased direct-reacting bilirubin, elevated alkaline phosphatase levels, negative or weakly positive cephalin flocculation and thymol turbidity tests, elevated serum glutamic oxalacetic transaminase levels, peripheral eosinophilia, and normal cholecystograms.

Gastro-intestinal disturbances not associated with hepatic effects and occasional allergic manifestations (urticaria, skin eruptions, and, rarely, anaphylaxis) have been reported. The normal intestinal gram-negative bacterial flora is not appreciably altered by erythromycin drugs.

Administration and Dosage: Ilosone is administered orally.

Infants and children under twenty-five pounds, 5 mg. per pound every six hours; twenty-five to fifty pounds, 125 mg. every six hours. Adults and children over fifty pounds, 250 mg. every six hours.

For severe infections, double the dosage. When larger doses are indicated, consider parenteral erythromycin therapy. In beta-hemolytic streptococcus infections, maintain treatment for ten days to prevent rheumatic fever or glomerulonephritis.

In syphilis, a total of 20 to 30 Gm. is administered in divided doses for ten to fifteen days. Close follow-up is necessary since erythromycin drugs have not had adequate evaluation in all stages of syphilis. Examination of spinal fluid is recommended during follow-up.

In gonorrhea, the dosage is 500 mg. four times a day for four days. Patients with a suspected lesion of syphilis should have a dark-field examination before receiving antibiotics and monthly serologic tests for three months. For detailed information, consult the package literature.

How Supplied: Pulvules® Ilosone, Capsules, N.F., 125 mg.* and 250 mg.*

Ilosone Liquid 125, Oral Suspension, U.S.P., 125 mg.* per 5-cc. teaspoonful.

Ilosone, 125, for Oral Suspension, N.F., 125 mg.* per 5-cc. teaspoonful.

Ilosone Drops, 5 mg.* per drop.

Tablets Ilosone Chewable, N.F., 125 mg.*

*Base equivalent. [080967]

References: 1. Griffith, R. S., and Black, H. R.: Am. J. M. Sc., *247*:69, 1964. 2. Griffith, R. S., and Black, H. R.: Antibiotics & Chemother., *12*:398, 1962. 3. Hirsch, H. A., Pryles, C. V., and Finland, M.: Am. J. M. Sc., *239*:198, 1960.

Additional information available to physicians upon request. Eli Lilly and Company, Indianapolis, Indiana 46206.

Lilly

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*PENTOBARBITAL (ACID)..... 1/8 GR.
*Warning: may be habit-forming

Synirin provides prompt barbiturate potentiation of aspirin without limiting the therapeutic usage of aspirin. Both pentobarbital and aspirin begin their action together promptly and last 4 or 5 hours. There is no accumulation.

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Manufacturers of ethical pharmaceuticals since 1856

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One by one the family's downed Because the G.I. bug's around

Parepectolin for quick relief of acute diarrhea
...soothes colicky pain with paregoric*
...consolidates fluid stools with pectin
...adsorbs irritants with kaolin,
and protects intestinal mucosa

Whether it's a 24-hour "bug", a food problem, or simply nervousness and anxiety, Parepectolin will bring the diarrhea under control until etiology can be determined. In some cases, Parepectolin may be all the therapy necessary.

Parepectolin®

Each fluid ounce of creamy white suspension contains:
*Paregoric (equivalent) ..... (1.0 dram) 3.7 ml.
Contains opium (¼ grain) 15 mg. per fluid ounce.
warning: may be habit forming
Pectin ..... (2½ grains) 162 mg.
Kaolin (specially purified) .... (85 grains) 5.5 Gm.
(alcohol 0.69%)
Usual Adult Dose: One or two tablespoonfuls three times daily.
Usual Children's Dose: One or two teaspoonfuls three times daily.

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WILLIAM H. RORER, INC.
Fort Washington, Pa.

removes the mental blur

that clouds vision

SOLFOTON®

Each tablet or capsule contains
PHENOBARBITAL ..... 16 mg.
(Warning: may be habit forming)
BENSULFOID® (See P D R) ..... 65 mg.
Precaution: same as 16 mg. of phenobarbital



Constructive Therapy

A Solfoton tablet or capsule at 6 hour intervals maintains sedation at the threshold of calmness, sustaining a mental climate for purposeful living.

Literature and clinical samples sent upon request.

FEDERAL LAW PROHIBITS DISPENSING WITHOUT PRESCRIPTION

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Poliovirus Vaccine Live, Oral, Trivalent

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CONTRAINDICATIONS and PRECAUTIONS: Do not inject this vaccine. Postpone vaccination in those with acute illness; in any condition having an adverse effect on the immune response mechanism (leukemias, lymphogenous diseases, dysgammaglobulinemias, during treatment with immune serum globulins or with cancer chemotherapy agents, etc.); in advanced debilitated states; or if there is persistent vomiting or diarrhea, or clinical signs of virus (including enterovirus) infection. Live measles and oral poliovirus vaccines should probably be given separately.

SIDE EFFECTS of significance have not been reported. However, the risk of vaccine-induced poliomyelitis, estimated to be from 1:2,500,000 to 1:50,000,000 should be considered.

Supplied in trays of 10. Order through your Lederle Representative or regular source of supply.

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Vasomist

(ANTIHISTAMINIC) VASOCONSTRICTOR, NASAL DECONGESTANT AND LOCAL ANTIHISTAMINIC

Active Ingredients:
Phenylephrine Hcl 0.25%
Phenylpropanolamine Hcl .. 0.50%
Chlorobutanol 0.15%
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In Isotonic Solution

Vasomist

(PLAIN)

VASOCONSTRICTOR AND NASAL DECONGESTANT

Active Ingredients:
Phenylephrine Hcl 0.25%
Phenylpropanolamine Hcl ... 0.50%
Chlorobutanol 0.15%
In Isotinic Solution

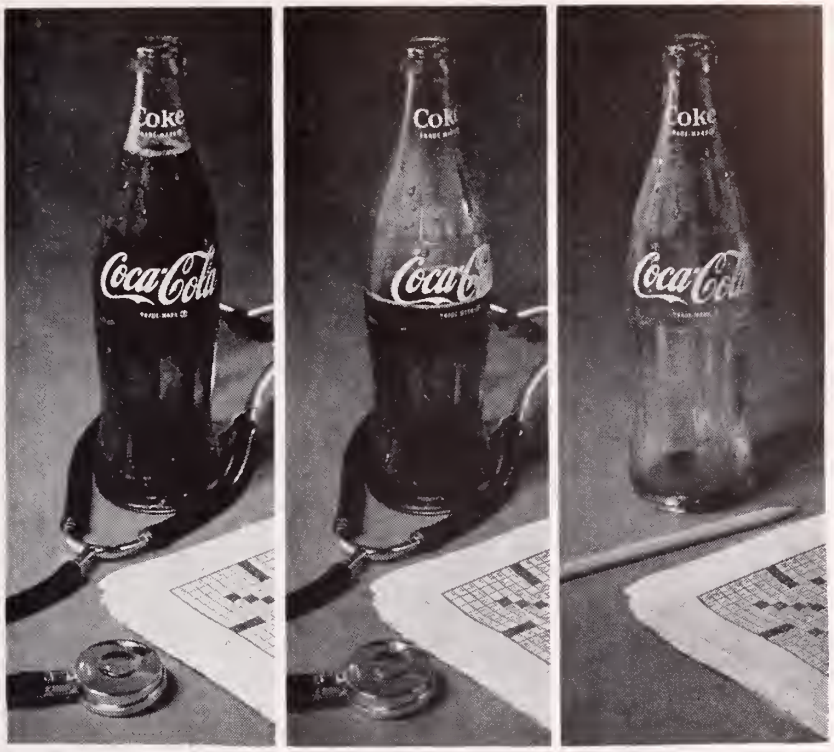
USE: Temporary relief of nasal congestion due to colds and hay fever.
DIRECTIONS: Adults and Children: Instill two or three drops into each nostril, using no more than needed to provide relief. Repeat every three to four hours as needed but not oftener.

AVAILABILITY
In plastic squeeze bottles containing ¾ fluid oz. and in dropper bottles containing 1 fluid oz.

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TEXARKANA, ARK.-TEX.

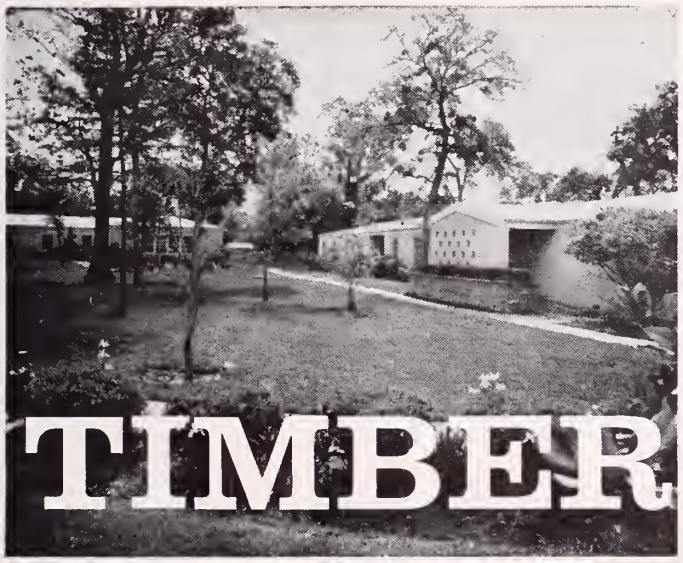






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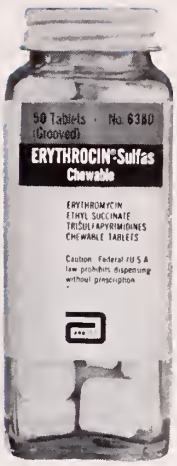
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Perhaps there have been times when you wanted to prescribe erythromycin and triple sulfas for little patients. Now you can—with a choice of two new fine-tasting pediatric forms.

New– Two Pediatric Forms of Erythromycin and Triple Sulfas





ERYTHROCIN®-SULFAS Chewable (Erythromycin ethyl succinate-trisulfapyrimidines chewable tablet)

In clinical trials[1,2], this orange-flavored tablet was given to 55 patients, aged four months to 18 years.

Diagnoses (multiple in some cases) represented a cross section of bacterial infections commonly seen in pediatric office practice.

Therapy was given from three to 12 days, with an average of six days.

Of the 55 patients, 30 were reported cured within 72 hours, while 22 showed partial recovery within the same time, and subsequent clinical cure.

A clinical cure rate of 94.5%

ERYTHROCIN®-SULFAS Granules (Erythromycin ethyl succinate-trisulfapyrimidines granules for oral suspension)

87 patients were treated[1,2]—all children, ages four months to 15 years.

The diagnoses were multiple in some cases and were chiefly bacterial infections of the respiratory tract.

Dosage was maintained from three to 10 days; average treatment was five days. All of the ill children accepted the orange-flavored suspension favorably.

53 were clinically cured within 72 hours, while 32 showed partial relief within the same time, and subsequent clinical cure.

701358

A clinical cure rate of 97.7%

1. Case Reports on File, Dept. Clin. Development, Abbott Laboratories.
2. Polley, R.F.L., Use of Erythromycin-Sulfas in Office Practice, Western Med., 7:177, July, 1966.

ABBOTT

Brief Summary on next page

ERYTHROCIN®-SULFAS
Brief Summary

Contraindications: Known sensitivity to erythromycin or sulfonamides. Because of the possibility of kernicterus with sulfonamides, do not use in pregnancy at term, premature or newborn infants.

Warnings: As with other forms of sulfonamide therapy, carefully evaluate patients with liver or kidney damage, urinary obstruction, or blood dyscrasia. Deaths have been reported from hypersensitivity reactions and blood dyscrasias following use of sulfonamides. Perform blood counts and liver and kidney function tests if used repeatedly at close intervals or for long periods.

Precautions, Side Effects: Occasionally mild abdominal discomfort, nausea or vomiting may occur with erythromycin, generally controlled by reduction of dosage. Mild allergic reactions (such as urticaria and other skin rashes) may occur. Serious allergic reactions have been extremely infrequent. Use sulfonamides with caution in patients with a history of allergy. Assure adequate fluid intake to prevent crystalluria and institute alkali therapy if indicated. If overgrowth of nonsusceptible organisms occurs, withdraw the drug and institute appropriate treatment. If a patient should show signs of hypersensitivity, appropriate countermeasures (e.g. epinephrine, steriods, etc.) should be administered and the drug withdrawn.

Adverse Reactions: Sulfonamide therapy may be associated with headache, nausea, vomiting, urticaria, diarrhea, hepatitis, pancreatitis, blood dyscrasias, neuropathy, drug fever, skin rash, injection of the conjunctiva and sclera, petechiae, purpura, hematuria and crystalluria.

Side effects due to erythromycin are infrequent, but occasional abdominal discomfort, nausea, or vomiting, urticaria and other skin rashes may occur.

Supplied: The Granules for Oral Suspension come in bottles of 60 ml. and 150 ml. The Chewable tablets are in bottles of 50. Each 5-ml. teaspoonful of reconstituted Granules or each Chewable tablet provides erythromycin ethyl succinate equivalent to 125 mg. of erythromycin activity and 167 mg. of each of sulfadiazine, sulfamerazine and sulfamethazine.

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In Obesity,
anorectic action
with fewer unwanted
side effects



CYDRIL®
(levamfetamine succinate TUTAG)



Cydril at 2 p.m.
Appetite control at 6
Sleep at 10

Action and Uses: Cydril (levamfetamine succinate) is a chemopharmaceutical approach to aid the obstinately obese. Cydril (levamfetamine succinate) provides the appetite depressant action of amphetamines but exhibits fewer unwanted side reactions.

Dosage: Adults and 'teenagers', one (1) Cydril (levamfetamine succinate) Granucap* daily.

Side Effects: Occasionally cardiovascular and gastrointestinal reactions may produce dry mouth, metallic taste, anorexia, nausea, diarrhea, headache, chilliness, pallor or flushing, sweating, diuresis, and arrhythmias.

Contraindications: Cydril (levamfetamine succinate) should not be used in the presence of severe hypertension, angina pectoris, hyperthyroidism, and Raynaud's disease.

*Granucap is the Tutag brand of sustained release capsule manufactured to release the contents over a period of approximately 6 to 10 hours.

Caution: Federal law prohibits dispensing without prescription.

Full product information available on request or see page 1122 in your 1967 PDR.

For more about CYDRIL and the Cydril Family of Products ask the Man from Tutag (or your colleagues)

S. J. TUTAG & CO. ETHICAL PHARMACEUTICALS
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Dulcolax®

bisacodyl

DU-5255 R

Few drugs work as predictably as Dulcolax. You can expect that when your office patient takes Dulcolax at home, it will be as effective as you said it would be. Your patient will be gratified, too.

The reliability of Dulcolax stems from its unique mode of action. The drug works directly on nerve endings in the colonic mucosa, producing normal peristalsis throughout the large intestine. It does not rely on systemic absorption for its effect.

This reliable action provides prompt relief of constipation. It also makes Dulcolax particularly useful for prepping the bowel for special procedures. In short, it makes Dulcolax ideal for your office practice.



Dulcolax acts so surely that the time of evacuation can often be closely predicted. Dulcolax tablets taken at night almost invariably result in a bowel movement soon after waking the following morning. Dulcolax suppositories generally work in 15 to 20 minutes, almost always within the hour.

General Dosage Information: *Adults:* When an ordinary laxative effect is desired, 1 to 3 tablets or 1 suppository usually suffices. Tablets must be swallowed whole, not chewed or crushed, and should not be taken within one hour of antacids or milk. *Children:* 1 or 2 tablets, depending on age and severity of condition. Tablets must not be given to a child too young to swallow them whole. For infants and children under 2 years of age, half a suppository is usually effective. Above this age a whole suppository is usually advisable. Side Effects: As with any laxative, abdominal cramps are occasionally noted, particularly in severely constipated persons. High dosage may result in loose, unformed stools. Contraindication: Contraindicated only in acute surgical abdomen. Availability: Tablets (5 mg.) and suppositories (10 mg.). By prescription or recommendation.

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Geigy



"Yes, Doctor, the pain is gone."

'EMPIRIN'® COMPOUND with CODEINE PHOSPHATE gr. 1/2 No. 3

Each tablet contains: Codeine Phosphate gr. ½ (Warning—May be habit forming), Phenacetin gr. 2½, Aspirin gr. 3½, Caffeine gr. ½.

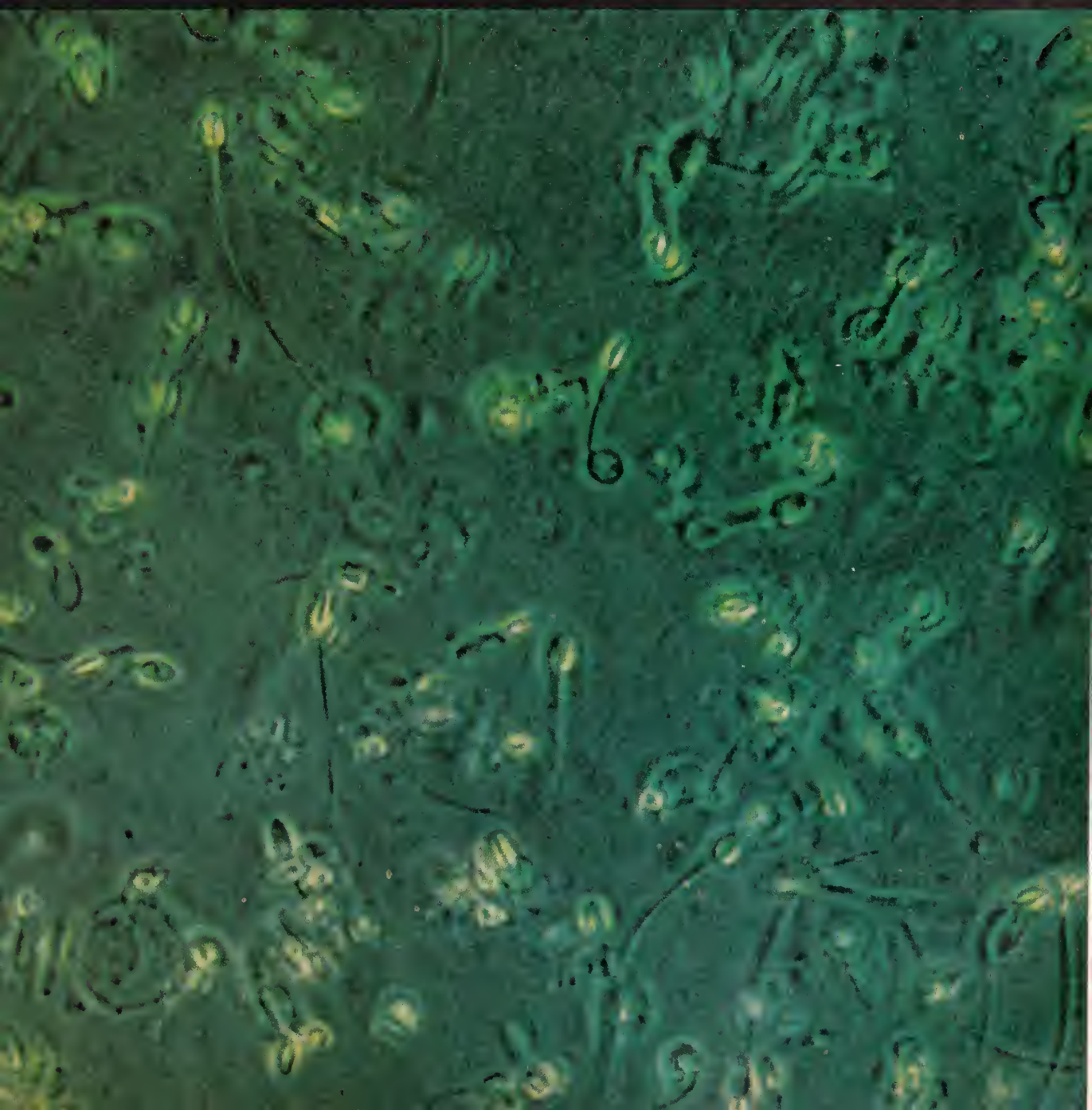
■ Despite introduction of synthetic substitutes, efficacy of 'Empirin' Compound with Codeine remains unchallenged.

BURROUGHS WELLCOME & CO. (U.S.A.) INC., Tuckahoe, N.Y.

When the talk turns to oral contraceptives, it makes medical sense to remember low-dose Norinyl®-1.

(norethindrone 1mg. & mestranol 0.05mg)

Turn page for contraindications, precautions and side effects.



Reduction of oral contraceptive dosage to the lowest effective levels is a well-accepted principle of conservative medical practice. In keeping with this view, Norinyl is now also available as Norinyl-1, containing exactly one half the previous dosage of norethindrone and mestranol. Clinical experience has established that effective fertility control can be achieved with the same degree of reliability and safety with new Norinyl-1 when taken as directed.

What about switching patients from higher dosage forms?

In transferring patients to low-dose Norinyl-1 from higher-dosage oral contraceptives, some breakthrough bleeding may occur in the early cycles. In the majority of cases the bleeding episode is mild and self-limited. The long-term advantages of the lower dosage form should be weighed against the inconvenience of possible breakthrough bleeding in the individual patient.

Prescribing Information

Contraindications: Patients with any symptoms or history of thrombophlebitis, pulmonary embolism, liver dysfunction or disease, carcinoma of breast or genital organs, or undiagnosed vaginal bleeding.

Warnings: Discontinue medication pending examination if there is sudden partial or complete loss of vision, proptosis, diplopia or migraine. If examination reveals papilledema or retinal vascular lesions, medication should be withdrawn. The safety of Norinyl-1 in pregnancy has not been demonstrated. If a patient misses two consecutive periods, pregnancy should be ruled out before continuing the medication. If she has not adhered to the prescribed schedule, pregnancy should be considered at the first missed period. Active ingredients of oral contraceptives have been detected in the milk of mothers who received these drugs; the significance to infants has not been determined.

Precautions: Pretreatment physical should include examination of the breasts and pelvic organs, as well as a Papanicolaou smear. If endocrine or liver function tests are abnormal during therapy, repeat tests are recommended after the drug has been withdrawn for two months. Following administration of drug, preexisting uterine fibromyomata may increase in size. Careful observation and caution are required for patients with symptoms or history of epilepsy, migraine, asthma, cardiac or renal dysfunction, cerebrovascular accident, psychic depression, and diabetes. In cases of undiagnosed vaginal bleeding, adequate diagnostic measures are indicated. Possible long-term effects of the drug on pituitary, ovarian, adrenal, hepatic or uterine function must await further studies. The physician should be alert to the earliest manifestations of thrombophlebitis and pulmonary embolism. The drug should be used judiciously in those young patients in whom bone growth is not complete. The age of the patient constitutes no absolute limiting factor, although treatment with Norinyl-1 may mask symptoms of the climacteric. The pathologist should be advised of Norinyl-1 therapy when relevant specimens are submitted.

Side Effects: The following have been observed with varying incidence in patients receiving oral contraceptives: nausea, vomiting, gastrointestinal symptoms, breakthrough bleeding, spotting, change in menstrual flow, amenorrhea, edema, chloasma or melasma, breast changes (tenderness, enlargement and secretion), change in weight (increase or decrease), changes in cervical erosion and cervical secretions, suppression of lactation when given immediately postpartum, cholestatic jaundice, migraine, rash (allergic), rise in blood pressure in susceptible individuals, mental depression. Although the following side effects have been reported in users of oral contraceptives, no cause and effect relationship has been established: anovulation posttreatment, premenstruallike syndrome, changes in libido, changes in appetite, cystitislike syndrome, headache, nervousness, dizziness, fatigue, backache, hirsutism, loss of scalp hair, erythema multiforme, erythema nodosum, hemorrhagic eruption, and itching. The following occurrences have been observed in users of oral contraceptives (a cause and effect relationship has neither been established nor disproved): thrombophlebitis, pulmonary embolism, neuroocular lesions.

The following laboratory tests may be altered by the use of oral contraceptives: increased sulfobromophthalein and other hepatic function tests, coagulation tests (increase in prothrombin, factors VII, VIII, IX and X), thyroid function (increase in PBI and butanol extractable protein-bound iodine and decrease in T^3 values), metyrapone test, pregnanediol determination.

norethindrone — an original steroid from

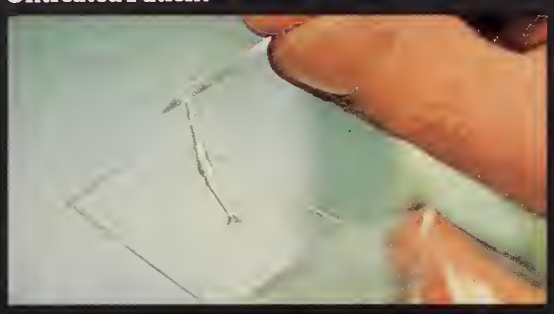
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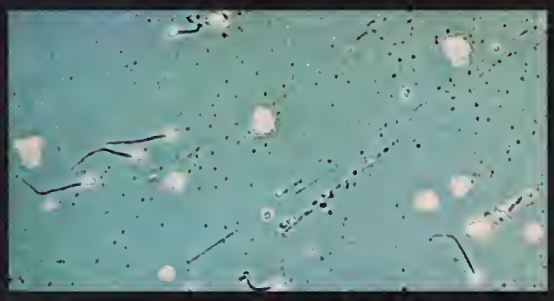
Here's why Norinyl-1 makes medical sense.

The effectiveness of Norinyl-1 as a low-dose oral contraceptive may be explained by its possible multiple action. In addition to its primary action of suppression of ovulation, Norinyl-1 may offer additional protective mechanisms... (1) creation of a cervical mucus that may be hostile to sperm penetration, and (2) development of an endometrium that may be out of phase with nidation. These effects are illustrated below.

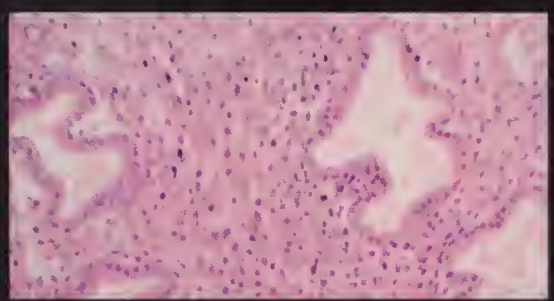
Untreated Patient



Cervical mucus at midcycle is usually thin and watery, with Spinnbarkeit (stretchability) of 15 to 20 cm.

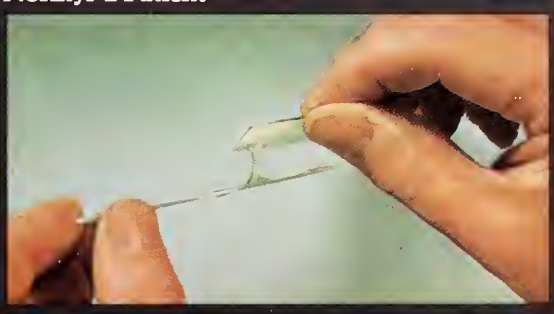


Spermatozoa appear healthy, active, freemoving.

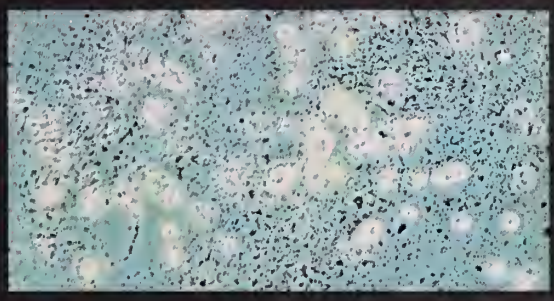


Endometrium of untreated patient is receptive to the fertilized ovum during secretory phase.

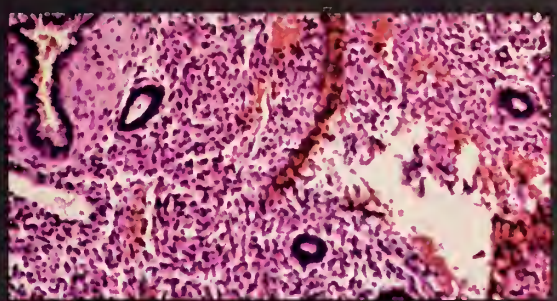
Norinyl-1 Patient



Cervical mucus at midcycle is scanty, viscous—with Spinnbarkeit of 1 cm. or less.



Immobile spermatozoa as they appear in cervical mucus taken from patient treated with Norinyl-1.



Norethindrone in Norinyl-1 accelerates secretory phase, suppresses glandular and vascular development.

Norinyl®-1
(norethindrone 1mg. c mestranol 0.05mg.) tablets

- new low dose of time-proved ingredients
- established norethindrone/mestranol ratio
- lower patient cost

An uncommon steroid for common inflammatory dermatoses

In everyday topical steroid therapy, Synalar produces rapid resolution of inflammation and itching in steroid-responsive dermatoses—and at relatively low cost to the patient.

Advanced molecular design enhances potency

Synalar combines the advantage of earlier corticosteroid compounds with unique structural innovations. As a result, preparations of Synalar 0.01% and Synalar 0.025% have been reported to be more potent topically and significantly more effective than hydrocortisone 1.0%. The unique fluocinolone acetonide molecule provides one of the most useful topical corticosteroids for everyday practice.

Impressive clinical results in a wide range of dermatologic problems

The clinical efficacy of Synalar has been extensively documented in the world literature. Commonly encountered diseases such as allergic and contact dermatitis, eczematous and seborrheic dermatitis, and neurodermatitis respond rapidly to Synalar, often where previous therapy with other topical corticosteroids has failed.

Low patient cost for wider usefulness

With Synalar, a high degree of efficacy does not mean high price. And—a small quantity goes a long way. Thus, your patients can often obtain the "economy" of a hydrocortisone preparation with the proved efficacy of a potent, truly advanced steroid.

Synalar®
fluocinolone acetonide





Turn page for contraindicat[illegible] precautions and side effe

For everyday topical steroid therapy

Synalar® 0.01%

fluocinolone acetonide provides economy in two practical dosage forms

For general use, the most economical and widely applicable concentration of Synalar is 0.01% Cream in a water-washable, vanishing cream base. Synalar Solution 0.01% is especially valuable in dermatoses involving moist, intertriginous areas or hairy sites where creams and ointments do not spread or penetrate readily. Synalar Solution is a unique dosage form—clear, nongreasy, cosmetically elegant.

Product Information

Contraindications: Tuberculous, fungal, and most viral lesions of the skin (including herpes simplex, vaccinia, and varicella). Not for ophthalmic use. Contraindicated in individuals with a history of hypersensitivity to any of the components. *Precautions:* Synalar preparations are virtually nonsensitizing and nonirritating. However, the solution may produce burning or stinging when applied to denuded or fissured areas. In some patients with dry lesions, the solution may increase dryness, scaling or itching. Where severe local infection or systemic infection exists, the use of systemic antibiotics should be considered, based on susceptibility testing. While topical steroids have not been reported to have an adverse effect on pregnancy, the safety of their use on pregnant females has not absolutely been established. Therefore, they should not be used extensively on pregnant patients, in large amounts, or for prolonged periods of time. *Side Effects:* Side effects are uncommon with topical corticosteroids. As with all drugs, however, a few patients may react unfavorably to Synalar under certain conditions. In such cases the agent should be discontinued and appropriate measures taken. *Availability:* Synalar (fluocinolone acetonide) Cream 0.025%—5, 15 and 60 Gm. tubes and 425 Gm. jars. Cream 0.01%—15, 45 and 60 Gm. tubes and 120 Gm. jars. Solution 0.01%—20 and 60 cc. plastic squeeze bottles. Ointment 0.025%—15 and 60 Gm. tubes. Neo-Synalar® (neomycin sulfate 0.5% [0.35% neomycin base], fluocinolone acetonide 0.025%) Cream—5, 15 and 60 Gm. tubes.

fluocinolone acetonide—an original steroid from

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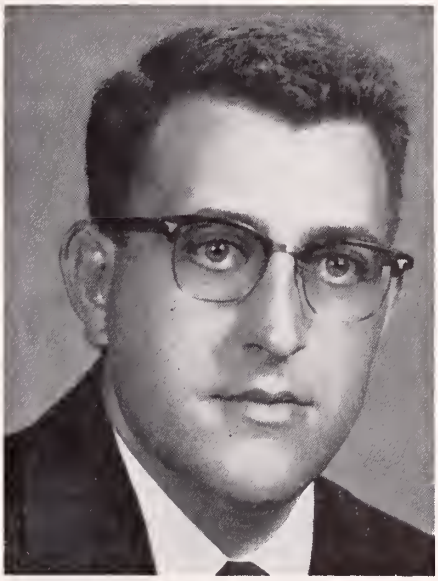
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These Syntex men serve the physician



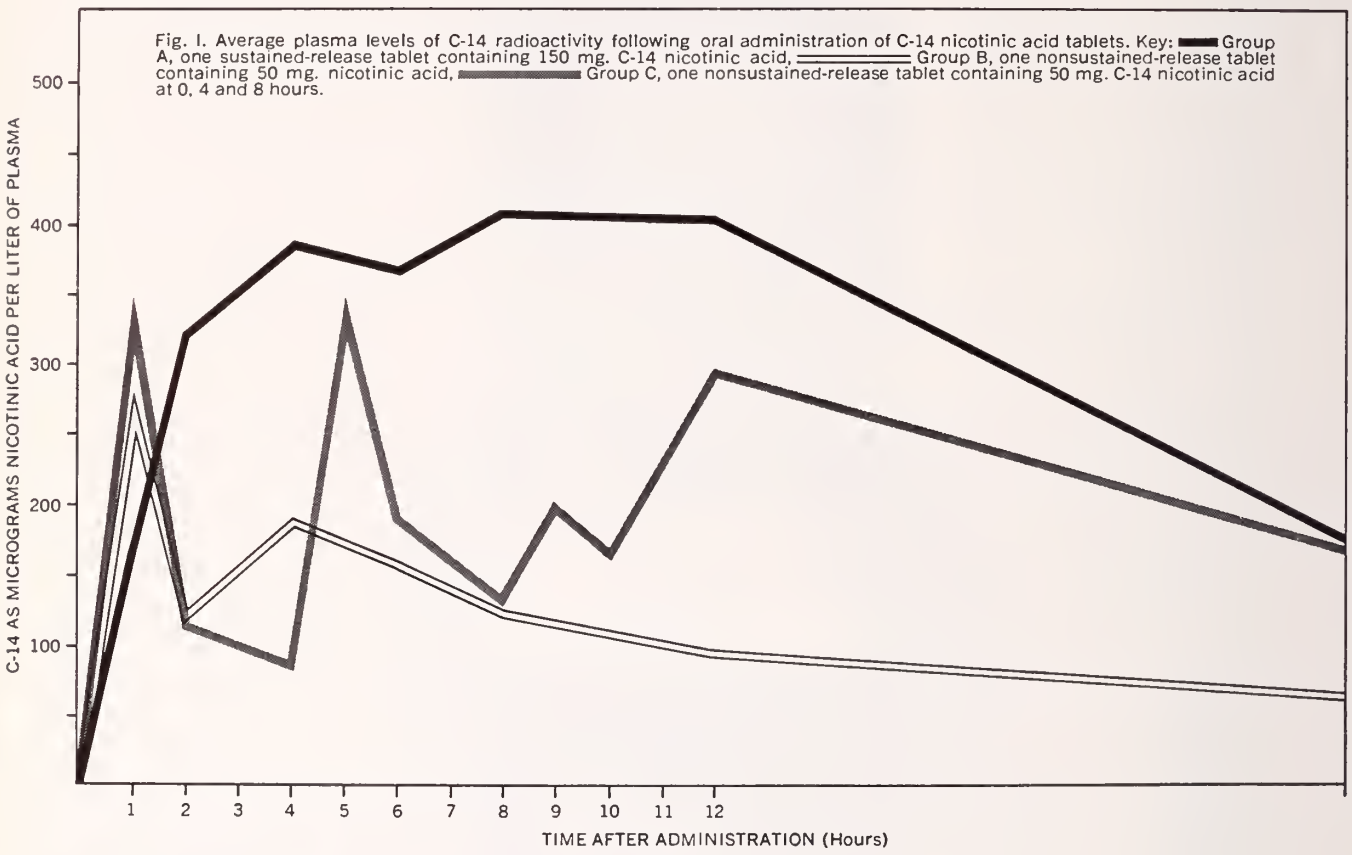
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Sustained circulatory, respirator and cerebral stimulation for th





(fewer absent doses by absent-minded patients)

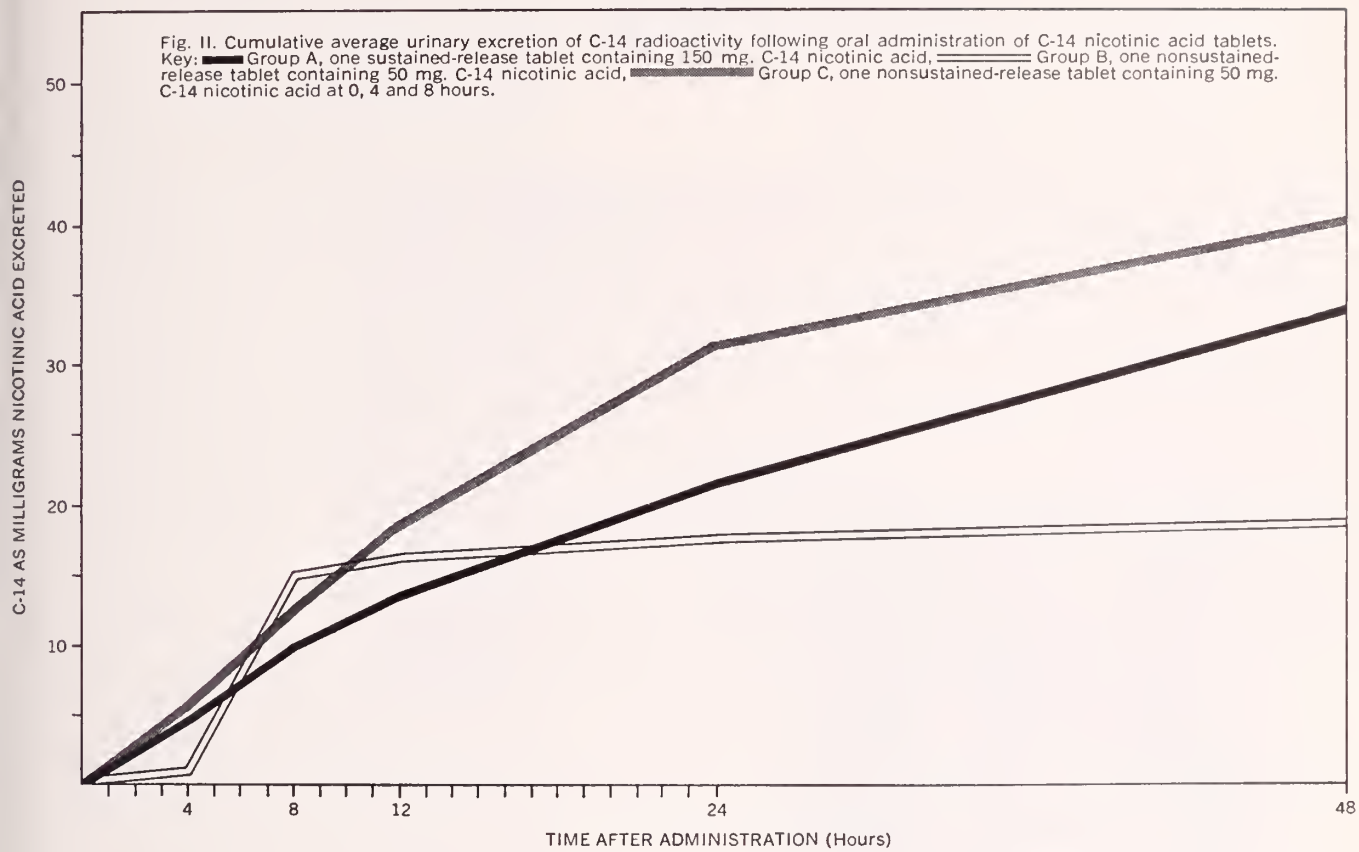
Human volunteer subjects were administered Geroniazol TT tablets with the nicotinic acid component made radioactive with C-14. Plasma and urine samples were analyzed. (See Figures I and II) The radioactive tracer study substantiated the previous clinical evidence that the release of nicotinic acid from the Geroniazol TT tablet produced a gradual rise in plasma levels to a plateau for a total of 12 hours and more.

Such proven sustained activity makes the management of geriatric patients much easier by minimizing the possibility of neglected doses through absent-mindedness or senile confusion. Therapy *can* be continuous on a daily dose of only one Geroniazol TT tablet every 12 hours.

The gradual release of nicotinic acid in Geroniazol TT will provide the well-known peripheral vasodilatation needed in patients with deficient circulation and with a minimum amount (if any) of "flushing." Also, cerebrovascular circulation is complemented by pentylenetetrazol, long-established as a cerebral and respiratory stimulant.

Geroniazol TT improves the typical, unfortunate, signs of senile confusion. Patients become more alert,

ged and debilitated



less confused and moody. Personal care, memory, emotional stability, social attention improve. Fatigue, apathy and irritability are reduced.

A prescription for 100 tablets of Geroniazol TT will permit your patients to enjoy the benefits of time-prolonged nicotinic acid/pentylenetetrazol therapy, at an economical price. Dosage is only one tablet every 12 hours.

Contraindications: There are no known contraindications.

Precautions: Exercise caution when treating patients with a low convulsive threshold.

Side Effects: Side effects are rarely encountered, however due to the vasodilatation effect of nicotinic acid, transitory mild nausea, flushing, tingling and pruritus are possible.

Dosage: One tablet every 12 hours.

Supplied: Prescribe bottles of 100 tablets, to take advantage of recent price reduction.

References: 1. Report by Nuclear Science & Engineering Corp., Pittsburgh, Pa., in files of Philips Roxane Laboratories. 2. Connolly, R.: W. Virginia Med. J. *56*:263 (Aug.) 1960. 3. Curran, T. R., and Phelps, D. K.: Am. Pract. & Digest Treat. *11*:617 (July) 1960.

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nicotinic acid 150 mg., pentylenetetrazol 300 mg.
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BRAND THIPHENAMIL HCl.

The relief received from the first Trocinate 400 mg. tablet is so prompt that the discomfort of diarrhea ceases to be a bother. May be repeated every four hours.

Upon request, a supply of Trocinate 400 mg. with literature will be sent to physicians for their personal use.

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Butazolidin®, phenylbutazone
In Acute Superficial Thrombophlebitis

Contraindications: Edema; danger of cardiac decompensation; history or symptoms of peptic ulcer; renal, hepatic or cardiac damage; history of drug allergy; history of blood dyscrasia. The drug should not be given when the patient is senile or when other potent drugs are given concurrently. Large doses of Butazolidin alka are contraindicated in glaucoma.

Warning: If coumarin-type anticoagulants are given simultaneously, watch for excessive increase in prothrombin time. Instances of severe bleeding have occurred. Pyrazole compounds may potentiate the pharmacologic action of sulfonylurea, sulfonamide-type agents and insulin. Carefully observe patients receiving such therapy. Use with great caution in the first trimester of pregnancy.

Precautions: Before prescribing, carefully select patients, avoiding those responsive to routine measures as well as contraindicated patients. Obtain a detailed history and a complete physical and laboratory examination, including a blood count. The patient should not exceed recommended dosage, should be closely supervised and should be warned to discontinue the drug and report immediately if fever, sore throat, or mouth lesions (symptoms of blood dyscrasia); sudden weight gain (water retention); skin reactions; black or tarry stools or other evidence of intestinal hemorrhage occur. Make regular blood counts. Discontinue the drug immediately and institute countermeasures if the white count changes significantly, granulocytes decrease, or immature forms appear. Use greater care in the elderly and in hypertensives.

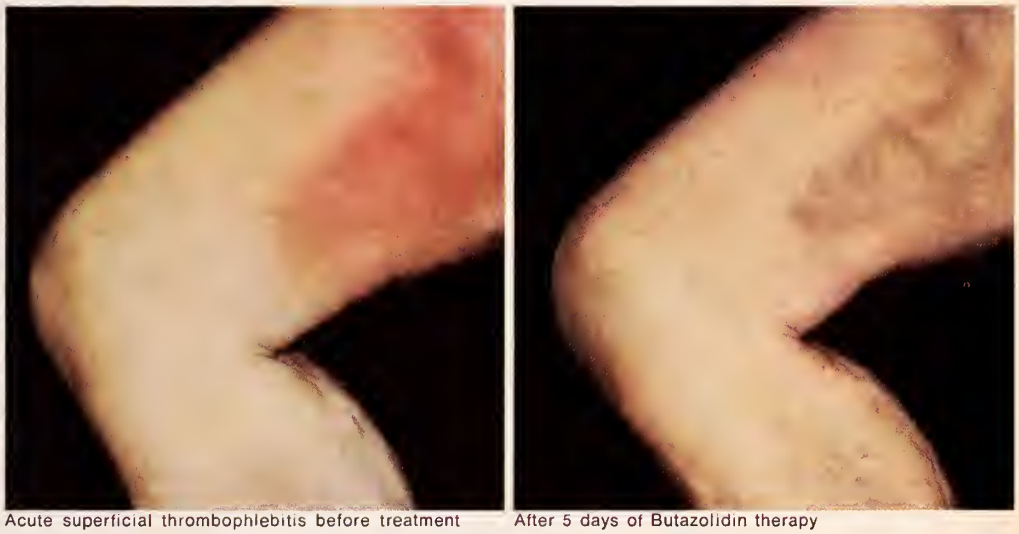
Adverse Reactions: The most common are nausea, edema and drug rash. Swelling of the ankles or face may be minimized by withholding dietary salt, reduction in dosage or use of diuretics. In elderly patients and in those with hypertension the drug should be discontinued with the appearance of edema. The drug has been associated with peptic ulcer and may reactivate a latent peptic ulcer. The patient should be instructed to take doses immediately before or after meals or with milk to minimize gastric upset. Mild drug rashes frequently subside with reduction of dosage. However, rash accompanied by fever or other systemic reactions usually requires withholding medication. Purpuric rash has also been reported. Agranulocytosis, exfoliative dermatitis, Stevens-Johnson syndrome, or a generalized allergic reaction similar to serum sickness may occur and require permanent withdrawal of medication. Stomatitis, salivary gland enlargement, vomiting, vertigo and languor may occur. Leukemia and leukemoid reactions have been reported. While not definitely attributable to the drug, a causal relationship cannot be excluded. Thrombocytopenic purpura and aplastic anemia may occur. Confusional states, agitation, headache, blurred vision, optic neuritis and transient hearing loss have been reported, as have hyperglycemia, hepatitis, jaundice, and several cases of anuria and hematuria. With long-term use, reversible thyroid hyperplasia may occur infrequently. Moderate lowering of the red cell count due to hemodilution may occur.

Dosage in Acute Superficial Thrombophlebitis: Initial: 6 capsules or tablets daily in divided doses for 2 or 3 days. Maintenance: 3 capsules or tablets daily. Usual duration of therapy is 5 to 7 days (rarely beyond 10 days). 6509-V(B)R2

*Stein, I.D.: Presented at the American Academy of General Practice, Dallas, Sept. 1967.

For complete details, please see full prescribing information.

it used to take weeks



Acute superficial thrombophlebitis before treatment

After 5 days of Butazolidin therapy

In acute superficial thrombophlebitis, patients were usually bedfast for 2 to 4 weeks, tying up hospital beds, requiring costly nursing care and time-consuming procedures such as warm soaks and packs.

When Butazolidin was added to the usual regimen, 960 of 1000 patients obtained complete resolution; most required only 30 capsules or tablets; relief of pain and discomfort and regression of inflammatory signs and fever occurred within a few days.*

Side effects occurred in 6% of the 1000 patients. While none were serious or long-lasting, Butazolidin can produce severe side effects in rare instances. Further, not every patient can take Butazolidin. Therefore, select patients with care and follow them closely. Contraindications, Warning, Precautions and Adverse Reactions are summarized in adjacent column.

Butazolidin gets bedfast thrombophlebitics out of bed, fast. Usual duration of treatment is 5 to 7 days, and rarely exceeds 10 days. Try it and see. For full details, please refer to the complete prescribing information.

Butazolidin® alka

Capsules:
phenylbutazone, 100 mg.; dried aluminum hydroxide gel, 100 mg.; magnesium trisilicate, 150 mg.; homatropine methylbromide, 1.25 mg.

Butazolidin®

phenylbutazone

Tablets of 100 mg.

Geigy

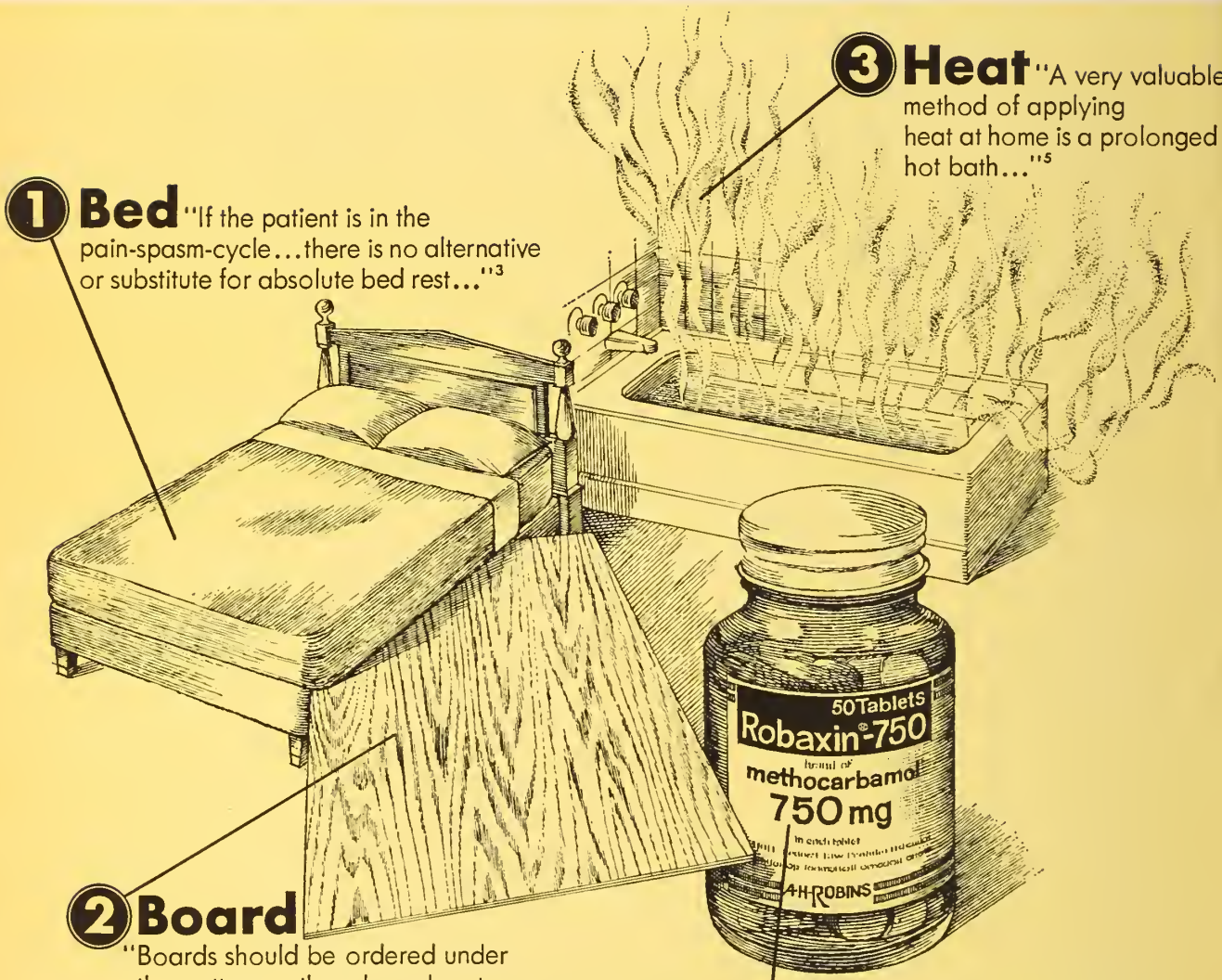
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A CONSERVATIVE, FOUR-POINT PROGRAM

The low back pain that is most frequently seen in general practice is mechanical in nature, i.e., postural back pain, joint dysfunction and acute back strain.[1,2] For this type of discomfort, a conservative regimen is usually sufficient to relieve aches and pains, and to help keep the patient functioning. Components of this basic program include:



1 Bed "If the patient is in the pain-spasm-cycle...there is no alternative or substitute for absolute bed rest..."[3]

2 Board "Boards should be ordered under the mattress...these boards act by immobilizing the spine..."[4]

3 Heat "A very valuable method of applying heat at home is a prolonged hot bath..."[5]

4 Robaxin®-750 (methocarbamol, 750 mg. capsule-shaped tablets) A well-tolerated[6] skeletal muscle relaxant, methocarbamol helps relieve spasm "...without interfering with normal tone and movement."[7] And there is little likelihood of sedation.[6]

Indicated for relief of skeletal muscle spasm. **Contraindicated** in hypersensitive patients. **Side Effects** (lightheadedness, dizziness, drowsiness, nausea) may occur rarely, but usually disappear on reduced dosage. Hypersensitivity reactions develop infrequently. See product literature for further details. **Also available:** Robaxin® Tablets (methocarbamol, 500 mg.) Robaxin Injectable (methocarbamol, 1 Gm./10 cc.)

References: (1). Gadfrey, C.M.: Applied Therap. 8:950, 1966. (2). Gattschalk, L.A.: GP 33:91, 1966. (3). Rawe, M.L.: J. Occup. Med. 2:219, 1960. (4). Cazen, L.: South Dakota J. Med. 18:26, 1965. (5). Sata-Hall, R.: Med. Sc. 14:23, 1963. (6). Weiss, M. and Weiss, S.: J. Am. Osteapath. A. 62:142, 1962. (7). Feuer, S.G., *et al.*: New York J. Med. 62:1985, 1962.

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Auxiliary—the definition being—one who or that which aids or helps, an assistant. This is exactly what the Oklahoma State Medical Association is asking of the Woman's Auxiliary to the OSMA. On October 3rd during the Fall Conference in Oklahoma City, Raymond F. Hain, M.D., Chairman of the State Legislative Committee of the OSMA gave us a real challenge whereby our efforts will not only help but will supplement what the OSMA Legislative Committee is doing.

It is important to mention that the workload experienced by Doctor Hain's committee with the Oklahoma Legislature will likely double in the future. This doubling is brought about by Oklahoma voters approving two years ago the constitutional amendment which now requires that Oklahoma lawmakers meet annually.

The OSMA State Legislative Committee feels strongly about the need for more physicians and their wives to expose themselves to and become more familiar with the legislative process and the detailed functions of the various branches and agencies of state government. It is felt that through this physician-family exposure and subsequent understanding, that physicians and their wives will be enhanced with far greater interest and thus, active participation.

What Are the Doctors Doing? 1. During the future legislative sessions the OSMA will continue to cooperate and co-sponsor the Legislative First Aid Station and the "Doctor of the Day" program. 2. Planning to conduct the Second Annual OSMA Forum on Medicine and Government next May. 3. Intensify their efforts in building greater rapport between medicine and individual legislators.

What Can Auxiliary Members Do? As outlined by Doctor Hain the following efforts are being stressed through auxiliaries in Oklahoma: 1. Meet your legislator and his family and become personally acquainted with them. 2. Join your state president January 9th at the State Capitol when we will initiate "Doctors' Wives Day" at the State Legislature. Action speaks louder than words. We also urge you to spend the day with your husband when he serves as Doctor of the Day. 3. Be an information center —ask your husband for the OSMA **Journal.** The OSMA Newsletter will be sent to each auxiliary member next year. Read it and discuss the issues with your husband. 4. Influence your husband to take an interest in legislative issues whether he is directly involved or not. 5. Communicate with the press. We must gain another ear. When you have done proper research and have all the information you can gather write a letter to the editor of your local paper and help tell medicine's side of the story.

Will You Stand Up and Be Counted? Mrs. Raymond Peeples, legislative chairman of the auxiliary, accepts the challenge from Doctor Hain on behalf of the auxiliary members. We are fully aware of our responsibility and know that if we as auxiliary members do not spring forth into action, we will be the losers.

Who Is In Charge? Medicine or Government? Do you help make the decisions or do you let others (mainly outsiders) through their emotions, ignorance, irrelevant facts or just plain meddlesome people make the health policies, thereby setting the quality of health care for your patients?

What Is The Public Image of The Doctors? Society in general usually misunderstands doctors, however, each individual loves his personal physician.

Where Do We Start? Effective communications must begin at home (local community) between the doctors and their colleagues; between the doctors and their wives; between doctors' wives and other doctors' wives. We must clarify the issue and reach an agreement whereby we can stand together and support one another. Effective communications with the public can best be done through patient contacts and through the wives in their social contacts. We must be honest, frank and sincere, realizing that we are all not infallible, but each one trying to do his best. We must speak in unison and tell medicine's side of the story and tell it with accuracy. No one is going to do our work for us! □

Over 85 per cent of under-65 population is covered by Health Insurance, according to a report issued recently by the Health Insurance Institute. Oklahoma is one of 32 states in which more than three-fourths are protected, but in northern and eastern areas as high as 95 per cent of the population is covered.

HII also reports a national health care bill of $30.6 billion in 1966, more than double that of a decade ago. The figure includes everything from aspirin to brain surgery. In 1957, the total cost was $14.7 billion. During the ten year span, physicians' fees are up 28.5 per cent and hospital charges rose 68 per cent, as compared to a total health care cost increase of 27.7 per cent.

Magazines lead health education field. When public knowledge of diseases was measured by a 1966 survey of the National Opinion Research Center, it was found that 24 per cent of the people received their information on cancer from magazines. Physicians rated eigth as a news source on this subject.

$229 million was disbursed by the Oklahoma Department of Public Welfare during the last year, an increase of $42.8 million over the previous year. Health expenditures were up $27.8 million, from $32,757, 892 to $60,-622,634. The DPW receives 38.8 per cent of its funds from state sales taxes and acquires the balance from the federal government.

New AMA manual on alcoholism, an excellent guide for the practitioner in dealing with this disease problem, is available to physicians at fifty cents a copy from the Order Handling Unit, AMA, 535 North Dearborn Street, Chicago, Illinois 60610.

Senate passed version of the Social Security bill will raise OASI taxes to a maximum of five per cent of the first $8,800 income. This means an individual who paid $290.40 this year would now pay $440.

Denver has poor experience with OEO clinic. As the Office of Economic Opportunity expands its invasion of major cities with free health clinics, the pioneer-experience in Denver signals cause for alarm. From an initial estimate of $125,000 the first year of the project, costs ballooned to $900,000; with eligibility limits of $575 monthly income for a family of four, 51.5 per cent of all Denver resident qualify for free medical and dental care; over 1,000 patients are seen weekly, with no referrals to private physicians; indigent case loads of other clinics and area hopitals have not been reduced by the new clinic; eleven satellite "Neighborhood" clinics are planned; and efforts of the Denver Medical Society to provide logical direction of the project have been ignored.

MEETINGS

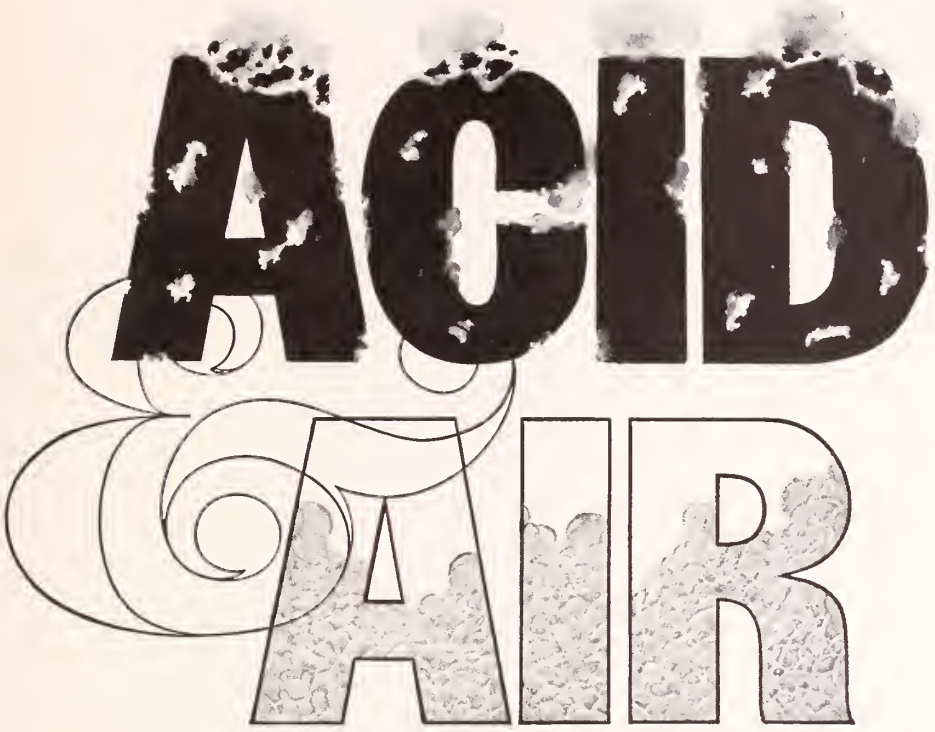
Nov. 21st—OSMA Regional Postgraduate Course, "Management of Coronary Artery Disease," Quality Courts Motel, Edmond

Nov. 26th-29th—AMA Clinical Convention, Houston, Texas

Feb. 2nd-3rd, 1968—OSMA Medicine and Religion Conference, Center for Christian Renewal, Oklahoma City

Feb. 5th-6th, 1968 — Oklahoma Chapter, American Academy General Practice, The Mayo Hotel, Tulsa

May 16th-18th, 1968—OSMA Annual Meeting, Skirvin Hotel, Oklahoma City



DUAL PROBLEM IN PEPTIC ULCER

Relief of hyperacidity is still a primary goal in the treatment of peptic ulcer. And antacids are the most widely used means of achieving this relief. But antacids alone cannot influence the distention and bloating which so often add to ulcer distress.

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OF MEDICINE

Before prescribing, please consult complete product information, a summary of which follows:

Contraindications: Patients with known hypersensitivity to the drug.

Warnings: Caution patients about possible combined effects with alcohol and other CNS depressants. As with all CNS-acting drugs, caution patients against hazardous occupations requiring complete mental alertness (*e.g.*, operating machinery, driving). Though physical and psychological dependence have rarely been reported on recommended doses, use caution in administering to addiction-prone individuals or those who might increase dosage; withdrawal symptoms (including convulsions), following discontinuation of the drug and similar to those seen with barbiturates, have been reported. Use of any drug in pregnancy, lactation, or in women of childbearing age requires that its potential benefits be weighed against its possible hazards.

Precautions: In the elderly and debilitated, and in children over six, limit to smallest effective dosage (initially 10 mg or less per day) to preclude ataxia or oversedation, increasing gradually as needed and tolerated. Not recommended in children under six. Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider individual pharmacologic effects, particularly in use of potentiating drugs such as MAO inhibitors and phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions (*e.g.*, excitement, stimulation and acute rage) have been reported in psychiatric patients and hyperactive aggressive children. Employ usual precautions in treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation have been reported very rarely in patients receiving the drug and oral anticoagulants; causal relationship has not been established clinically.

Adverse Reactions: Drowsiness, ataxia and confusion may occur, especially in the elderly and debilitated. These are reversible in most instances by proper dosage adjustment, but are also occasionally observed at the lower dosage ranges. In a few instances syncope has been reported. Also encountered are isolated instances of skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extrapyramidal symptoms, increased and decreased libido—all infrequent and generally controlled with dosage reduction; changes in EEG patterns (low-voltage fast activity) may appear during and after treatment; blood dyscrasias (including agranulocytosis), jaundice and hepatic dysfunction have been reported occasionally, making periodic blood counts and liver-function tests advisable during protracted therapy.

Usual Daily Dosage: Individualize for maximum beneficial effects. *Oral*—Adults: Mild and moderate anxiety and tension, 5 or 10 mg t.i.d. or q.i.d.; severe states, 20 or 25 mg t.i.d. or q.i.d. Geriatric patients: 5 mg b.i.d. to q.i.d. (See Precautions.)

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JOURNAL
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Volume 60
Number 12
December 1967



In this issue:

Children's Reaction To Christmas
Evaluation of Disability of the Back
Chronic Disease Program for Cleveland County, Oklahoma
The Team Approach in Rehabilitation Medicine

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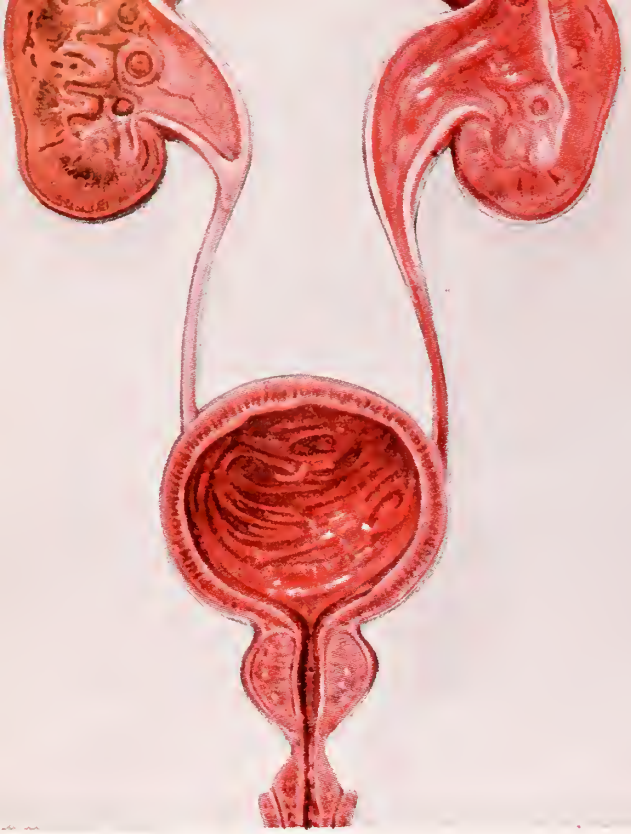
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Diagnosis:

cystitis?
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pyelitis?
urethritis?
prostatitis?

in any case,
usually gram-negative*

Therapy:

two 500 mg. Caplets® q.i.d.
(initial adult dose)

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a specific anti-gram-negative

eradicates most urinary tract infections...

- Low incidence of untoward effects; no fungal overgrowth, crystalluria, ototoxic or nephrotoxic effects have been observed.

- "Excellent" or "good" response reported *in more than 2 out of 3* patients with either chronic or acute gram-negative infections.[1]

*As many as 9 out of 10 urinary tract infections are now caused by gram-negative organisms: E. coli, Klebsiella, Aerobacter, Proteus, Paracolon or Pseudomonas[2]...However, infections of the urethra and prostate caused by non-gonococcal gram-negative organisms are believed to be less prevalent.

Summary of prescribing information

Indications: Urinary tract infections in which gram-negative bacteria are predominant, particularly *Proteus, Escherichia coli, Aerobacter, Klebsiella,* and certain strains of *Pseudomonas*. Gram-positive bacteria are less sensitive to NegGram but favorable clinical results have been observed.

Warning: Use in Pregnancy. This drug is not recommended in the first trimester of pregnancy. However, it has been used in several patients during the last two trimesters without producing apparent ill effects in either mother or fetus.

Precautions: As with all new drugs, periodic blood and liver function tests are advisable during treatment longer than 1 or 2 weeks. **This drug should be used with caution in patients with liver disease, epilepsy, severe cerebral arteriosclerosis, or severe impairment of kidney function.** Because photosensitivity reactions have been reported in a small number of cases, patients should be cautioned to avoid unnecessary exposure to direct sunlight while receiving NegGram, and if a photosensitivity reaction occurs, therapy should be discontinued. The dosage recommended for adults and children should not arbitrarily be doubled unless under the careful supervision of a physician. Should bacterial resistance develop or additional nonsensitive strains emerge, other effective antibacterial agents should be added to or substituted for NegGram.

When testing the urine for glucose in patients receiving NegGram, Clinistix® Reagent Strips or Tes-Tape® should be used since other reagents may give a false-positive reaction.

Adverse reactions: Mainly mild nausea, vomiting, and other gastrointestinal disturbances; less frequently, sleepiness, drowsiness, weakness, headache, dizziness and vertigo, and rarely cholestasis, paresthesia, thrombocytopenia, leukopenia, or hemolytic anemia in patients with a deficiency in activity of glucose-6-phosphate dehydrogenase. Itching, pruritus, rash, urticaria, mild eosinophilia, reversible photosensitivity reactions primarily involving exposed surfaces, and reversible subjective visual disturbances (overbrightness of lights, change in visual color perception, difficulty in focusing, decrease in visual acuity and double vision), occurred occasionally. Reversible increased intracranial pressure with bulging anterior fontanel, papilledema, and headache has been observed occasionally in infants and children. Toxic psychosis and brief convulsions (the latter generally in patients with possible predisposing factors, and both usually associated with excessive dosage) have been recorded in rare instances.

Dosage and administration: ***Adults*—Four Gm. daily by mouth (2 Caplets® of 500 mg. four times daily) for one to two weeks. Thereafter, if prolonged treatment is indicated, the dosage may be reduced to two Gm. daily (1 Caplet of 500 mg. four times daily). *Children*—According to age and weight: approximately 25 mg. *per pound* of body weight per day, administered in divided doses.**

Note: The dosage recommended above for adults and children should not arbitrarily be doubled unless under the careful supervision of a physician. Until further experience is gained, infants under 1 month should not be treated with the drug.

How supplied:

- **For adults**—Buff-colored, scored Caplets of **500 mg.,** conveniently available in bottles of 56 (sufficient for one full week of therapy) and in bottles of 1000.
- **For children**—Caplets of **250 mg.,** available in bottles of 56 and 1000.

Before prescribing, please refer to complete prescribing information.

References: (1) Based on 23 clinical papers, 1512 cases. Bibliography on request. (2) Bush, I. M., Orkin, L. A., and Winter, J. W., in Sylvester, J. C.: Antimicrobial Agents and Chemotherapy—1964, Ann Arbor, American Society for Microbiology, 1965, p. 722.

Winthrop

Winthrop Laboratories, New York, N. Y. 10016

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1967
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Cover art by William Mark Cason

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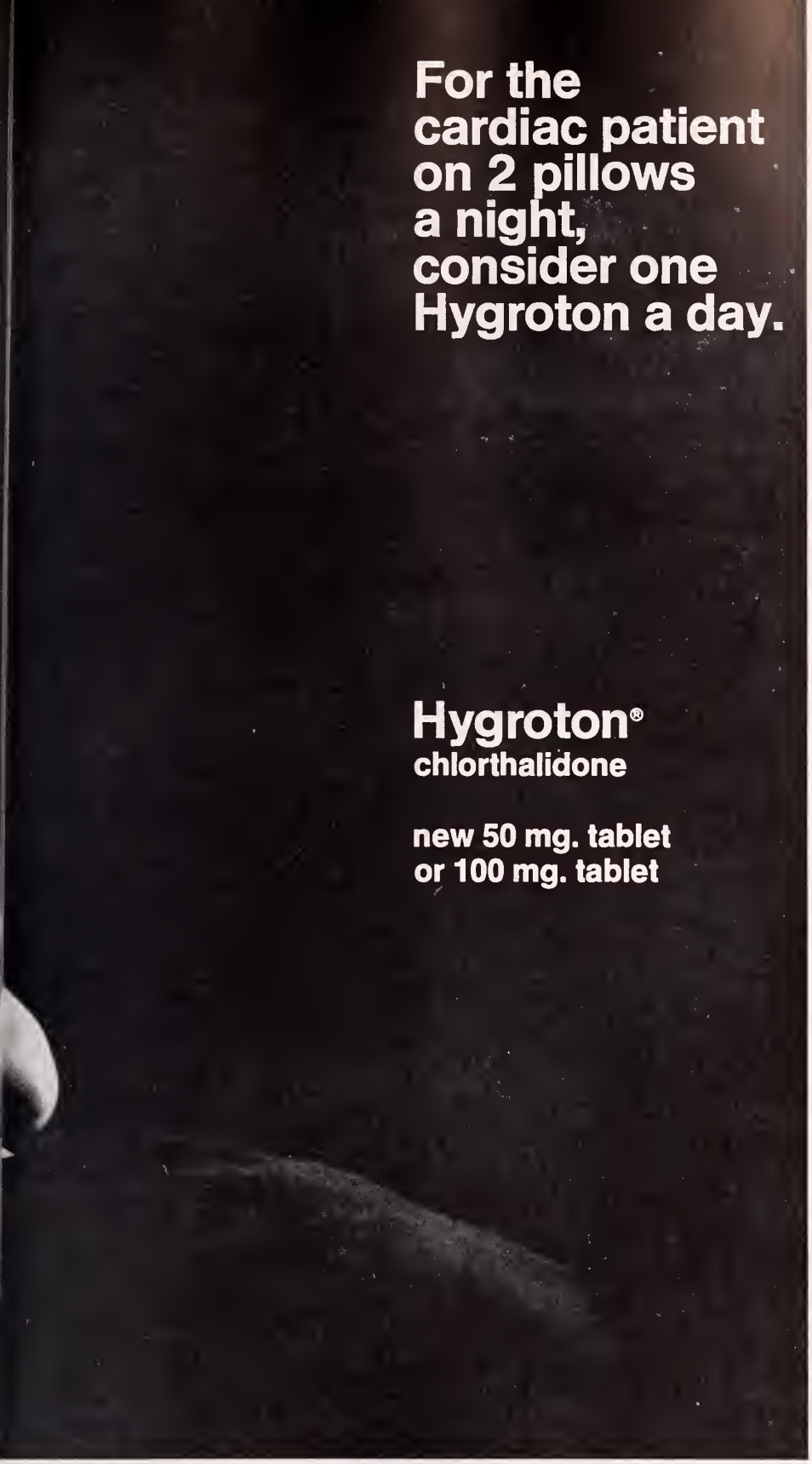
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Use with caution in pregnant patients, since the drug may cross the placental barrier and adverse reactions which may occur in the adult (thrombocytopenia, hyperbilirubinemia, altered carbohydrate metabolism, etc.) are potential problems in the newborn.
Precautions: Antihypertensive therapy with Hygroton should always be initiated cautiously in postsympathectomy patients and in patients receiving ganglionic blocking agents or other potent antihypertensive drugs, or curare. Reduce dosage of concomitant antihypertensive agents by at least one-half. Barbiturates, narcotics or alcohol may potentiate hypotension. Because of the possibility of progression of renal damage, periodic determination of the BUN is indicated. Discontinue if the BUN rises or liver dysfunction is aggravated. Hepatic coma may be precipitated.
Electrolyte imbalance, sodium and/or potassium depletion may occur. If potassium depletion should occur during therapy, Hygroton should be discontinued and potassium supplements given, provided the patient does not have marked oliguria.
Take special care in cirrhosis or



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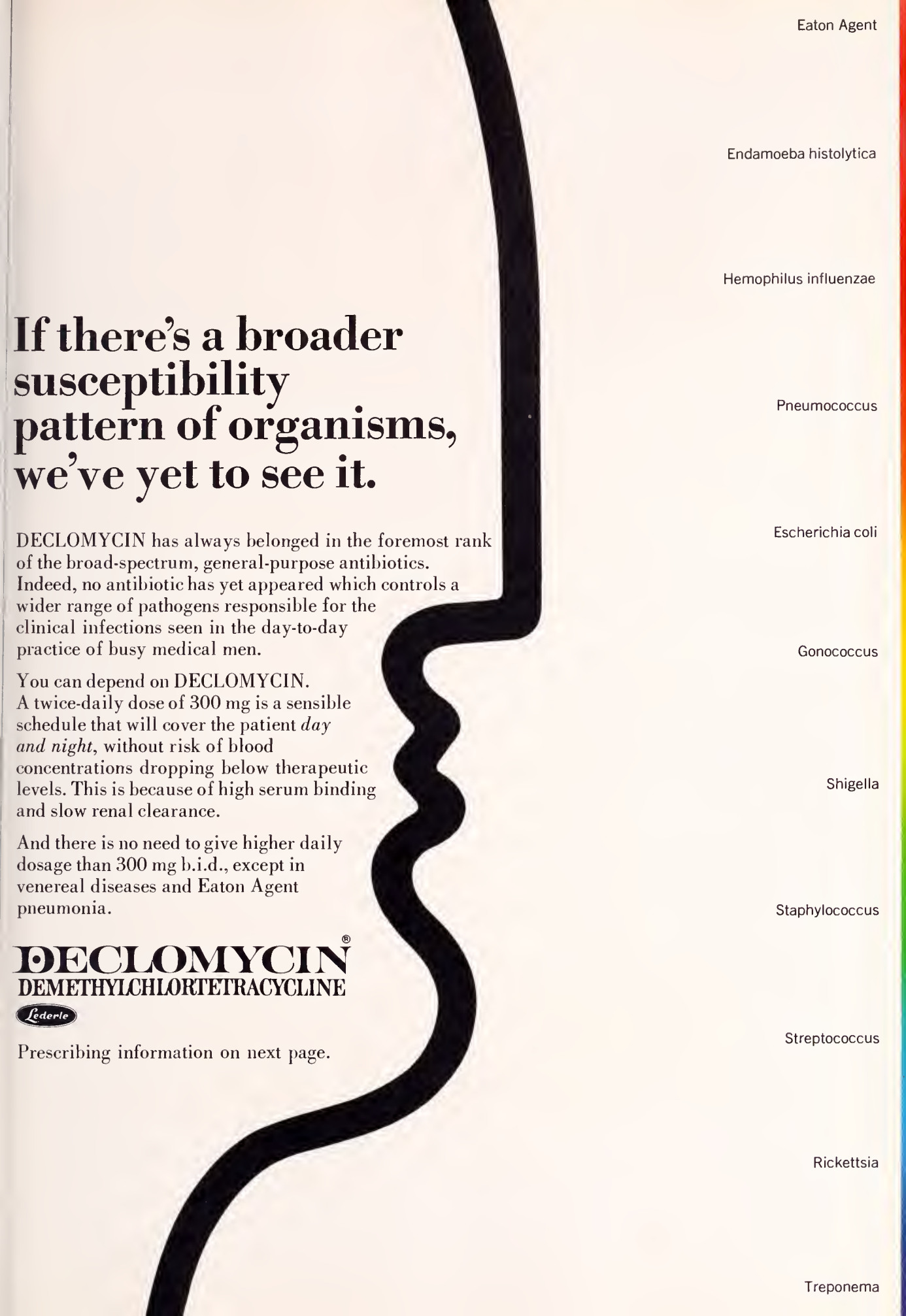
the defoaming action of simethicone—to help relieve the painful gas symptoms which often accompany peptic ulcer.

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antacid therapy plus an added benefit

nonfatiguing flavor/smooth pleasant texture; both assure patient cooperation during long-term therapy.

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Rickettsia

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DECLOMYCIN Demethylchlortetracycline should be equally or more effective therapeutically than other tetracyclines when the offending organisms are tetracycline-sensitive.

Contraindication: History of hypersensitivity to demethylchlortetracycline.

Warning—In renal impairment, usual doses may lead to excessive accumulation and liver toxicity. Under such conditions, lower than usual doses are indicated, and, if therapy is prolonged, serum level determinations may be advisable. A photodynamic reaction to natural or artificial sunlight has been observed. Small amounts of drug and short exposure may produce an exaggerated sunburn reaction which may range from erythema to severe skin manifestations. In a smaller proportion, photoallergic reactions have been reported. Patients should avoid direct exposure to sunlight and discontinue drug at the first evidence of skin discomfort. Necessary subsequent courses of treatment with tetracyclines should be carefully observed.

Precautions—Overgrowth of nonsusceptible organisms may occure. Constant observation is essential. If new infections appear, appropriate measures should be taken. In infants, increased intracranial pressure with bulging fontanels has been observed. All signs and symptoms have disappeared rapidly upon cessation of treatment.

Side Effects—Gastrointestinal system—anorexia, nausea, vomiting, diarrhea, stomatitis, glossitis, enterocolitis, pruritus ani. Skin—maculopapular and erythematous rashes. A rare case of exfoliative dermatitis has been reported. Photosensitivity; onycholysis and discoloration of the nails (rare). Kidney—rise in BUN, apparently dose related. Transient increase in urinary output, sometimes accompanied by thirst (rare). Hypersensitivity reactions—urticaria, angioneurotic edema, anaphylaxis. Teeth— dental staining (yellow-brown) in children of mothers given this drug during the latter half of pregnancy, and in children given the drug during the neonatal period, infancy and early childhood. Enamel hypoplasia has been seen in a few children. If adverse reaction or idiosyncrasy occurs discontinue medication and institute appropriate therapy.

Average Adult Daily Dosage: 150 mg q.i.d. or 300 mg b.i.d. Should be given 1 hour before or 2 hours after meals, since absorption is impaired by the concomitant administration of high calcium content drugs, foods and some dairy products. Treatment of streptococcal infections should continue for 10 days, even though symptoms have subsided.

In the treatment of syphilis a dosage schedule of a total of 12 to 18 Gm. given in equally divided doses over a period of 10 to 15 days should be followed. Close follow-up observation of the patient is recommended, including appropriate laboratory tests, since demethylchlortetracycline has not had adequate evaluation in all stages of syphilis. Spinal fluid examination should be included as part of this follow-up.

Acute gonococcal anterior urethritis in males has been treated effectively with a single dose of 600-900 mg. of DECLOMYCIN Demethylchlortetracycline. Individuals unahle to tolerate large single doses due to gastrointestinal side effects may be treated with 150 mg. every 6 hours for a minimum of 4 doses or 300 mg. every 12 hours for a minimum of 2 doses. Females should be treated with a dosage of 150 mg. every 6 hours or 300 mg. every 12 hours until a cure is affected. Primary Atypical Pneumonia (Eaton Agent): The average adult daily dosage is 900 mg. in 3 divided doses for six days.

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6. DATE OF ONSET | 7 DATE FIRST CONSULTED | 8. DUE TO PREGNANCY ☐ YES ☐

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12. IF HOSPITALIZED, NAME AND ADDRESS OF

15 NAME AND ADDRESS OF OTHER P

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16 TOTAL DISAP
FROM

17 P

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APPROVED BY THE OKLAHOMA STATE MEDICAL ASSOCIATION

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The School of Health Related Professions: An Emerging Academic Concept

TOYNBEE HAS SAID that the twentieth century will be chiefly remembered as an age in which societies dared to think of welfare for the whole human race. That day has arrived because society demands that good health care and comprehensive rehabilitation services shall be among the "rights and privileges" of all citizens. Health care, now the third largest industry in our society, could become the largest.

Placing training for health care professions in an academic entity does however, create issues and questions, *viz.*: Who shall do what? What are the numbers of workers needed to do what specific things? What administrative and academic experiences are needed to provide such personnel? Are current experience and practice in education, clinical training, and manpower utilization the bases for meeting new needs? If not, what should our practices be and how do we change something, especially in conservative academia? Will professional groups tolerate changes? What is the role of junior colleges and technical schools? Will those who represent various health manpower occupations develop common bodies of knowledge and shared clinical experiences, so that we truly achieve the concept of a "health team?" These are a few of the compelling questions and issues surrounding the topic of a School of Health Related Professions (SHRP).

With economic development and population growth, the training of health personnel in medical centers, hospitals, and health centers was designed to alleviate pressures on the physician by delegation of tasks to certain health care specialties. Many health professions evolved because medicine, or a subspecialty, offered a preceptorship in a hospital to get the person ready to accept certain duties and responsibilities. A certificate, granted at the conclusion of training, indicated mastery of basic skills. Hospitals still prefer this emphasis on clinical training experience rather than academic instruction.

Society today demands extended educational experiences and specialized skills, which affect the training for health professions. Education has been subsidized through federal, state, and private resources; but the philosophy is to support degree programs in preference to nonacademic, certificate curricula. Concurrently, the upgrading thrust of health occupations has resulted in abandonment of some nondegree programs supported by both hospitals and associations representing certain health care occupations.

Beginning in the 1930's, the American Medical Association Council on Medical Education looked at training programs for Medical Technologist, Occupational Therapist, and Physical Therapist. Specifically considered were minimal training essentials requisite for a program, which would serve as criteria for evaluating and accrediting programs. Subsequently, Medical Librarian (1943), X-Ray Technician (1944), Medical Record Technician (1953), Inhalation Specialist (1962), and Cytotechnologist (1962) have been approved. The Council and collaborating professional groups continue to develop, revise, and recommend relative to such programs. These eight health occupations (with nearly 2,000 approved training programs in the United States) represent the nucleus of the concept for the SHRP. At the University of Oklahoma Medical Center six of these eight programs exist.

The SHRP concept and title have had considerable discussion and semantic elaboration. Margaret Mead said, a year ago, that we must weave dignity into the health team and give every health worker dignity! Can we give dignity to health occupations when we talk of "subprofessional" schools or programs, when "subprofessional" means "below me" and without responsibility? Another term used to describe health manpower and training programs is "paramedical." Dorland's *American Illustrated Medical Diction-*

Portions of this paper were presented at the Preventive Medicine and Public Health Seminar, September 28th, 1967, University of Oklahoma Medical Center.

ary says para means "besides, beyond, accessory to, apart from, against," while Webster offers "by side of, besides, along side of, past, beyond, to one side, amiss." This negative cast of unrelatedness or subordinate position, contradictory to a health team concept, has established more reasonable titles for this new academic entity found in medical centers, namely: Allied Health Professions, Associated Health Professions, and Health Related Professions.

Approximately eighteen academic institutions, including the University of Oklahoma Medical Center, have separate schools or colleges of Allied or Health Related Professions. At the University of Oklahoma Medical Center, credit for the formation of the SHRP goes to Doctor William W. Schottstaedt and Doctor Thomas N. Lynn, Jr., who presented the format leading to approval of its place in the Medical Center academic structure. Study and discussion have been in progress three years and currently the school needs to be administratively developed, budgeted, and housed.

The SHRP currently incorporates 13 programs based in the Medical Center. Intern type programs include Dietetics, Medical Librarian, and Hospital Pharmacy. Dietetics is older in point of operation, while the latter two programs are relatively new. Each is a one year program with a bachelor's degree prerequisite, though Pharmacy has this experience as a senior year clinical clerkship.

Baccalaureate degree programs are Physical Therapy and Medical Technology, with the senior year spent at the Medical Center in courses and clinical experience. Clinical Social Work, a rather limited program at present, utilizes the Medical Center for master's degree level field experience.

Degree programs are being planned for some programs currently offering only certification. Radiology Technology, a two year program with a high school prerequisite, has developed a degree program designed for specialists in education, administration, and supervision of radiologic services. Cytotechnology, a one year program with two years of college a prerequisite, is considering a bachelor's degree program. Academic upgrading in this instance appears to result from its relationship and curricular similarity to Medical Technology. Inhalation Therapy Technology, formerly a nine month program, has begun a two year program to meet accreditation and registry, as well as a possible associate degree. Orthoptics, a 15 month program with a two year college prerequisite, is also considering a bachelor's degree program. Medical Record Librarian, included in the prospectus for the establishment of the SHRP, is an in-service program limited to three months on-the-job training involving the filing processes. Approved formal programs for Medical Record Librarian have a two year college prerequisite, and 12 months in training rotating through-out the records process in approved hospitals. By 1970, this profession expects to phase in to a bachelor's degree program.

Two programs at the University of Oklahoma Medical Center presently offer a certificate and have no degree program aspiration. Licensed Practical Nurse is a three day per week, 18 month program, conducted in cooperation with the Oklahoma City Board of Education. Surgical Technician, a six month program, is essentially an on-the-job training resource.

Nearly all associations representing the health occupations advocate some type of academic degree, in addition to essential certification or registry requirements. Graduate degrees and continuing education are also urged as a means of upgrading health personnel. Accordingly, projected degree programs at the University of Oklahoma Medical Center may include Occupational Therapy, Recreational Therapy, and Rehabilitation Counseling. All are important to comprehensive medical care, through the curricula and faculty need development. Certificate or associate degree programs eventually to be considered include: Dental Hygiene, Physical Therapy Assistant, Laboratory Assistant, Food Service Supervisor, Health Information Specialist, Medical Record Technician, and Ophthalmic Assistant. Speech and Hearing, Clinical Psychology, Prosthetic Education, and Rehabilitation Research specialties may also become part of the SHRP concept in the future.

The Allied Health Professions Personnel Training Act of 1966 represents financial support for both the SHRP programs and trainees. It specifically supports Medical

Technician, Optometric Technologist, Dental Hygienist, Radiologic Technologist, Medical Record Librarian and Technician, Dietitian, Occupational Therapist and Technician, Physical Therapist, X-Ray Technician, Inhalation Therapy Technician, Dental Laboratory Technician, Dental Assistant, Ophthalmic Technician, and Food Service Assistant. This act covers both baccalaureate and associate degree training.

The SHRP concept, as an academic vehicle, is confronted with the following problems wherever it is found:

1. The precedent for student stipends in medical centers, whereas other newer programs in universities do not have specific support for students. Also, a need for stipend parity among the family of health related professions is imperative, to prevent imbalance in recruitment and to maintain a reasonable equity in manpower development.

2. Continued academic upgrading in training programs places pressures on administrative bodies and faculty in the academic community. Collaterally, selection of students, quality of instruction, and instructional resources continue to inhibit resolution.

3. Associate degree or junior college preparation, as a manpower resource for the SHRP, needs careful analysis and implementation.

4. Common courses or core curricula appear likely prospects for innovation and facilitation of training, reduction of costs, and increase in manpower.

5. Innovative training in, and deliberate use of non-medical center facilities for clinical training, with local faculty, appears necessary to increase manpower.

6. The need to analyze job functions and utilize the proper level of mind power will be a challenge to the economical use of manpower.

The purposes and programs of the SHRP at the University of Oklahoma Medical Center seem consistent with a statement made by Surgeon General Stewart of the Public Health Service: "It is time for us to focus sharply on the nature of training we provide . . . and to give high priority to education for what." It is indeed time to adjust our educational and training programs for those in the health fields, to the changing times and changing needs of those to be served. With physical, biological, and behavioral sciences moving toward integration of knowledge and techniques to deal with the total man, it is conceivable that if all health related professions train together they are likely to work together in health care for our nation.

To this goal, the School of Health Related Professions at the University of Oklahoma Medical Center is committed.—*Harry J. Parker, Ph.D., Research Professor, Preventive Medicine and Public Health and Director for Planning for the School of Health Related Professions, University of Oklahoma Medical Center.* □

References will be furnished on request to the author.

Writer's Disease

CLARITY OF EXPRESSION ranks second only to sound thinking in the production of a good medical paper. Most men responsible for modern papers however, are more accustomed to practicing medicine than they are to writing and when they take up the pen they often develop a transient psychosis which resembles stage fright. Some common manifestations of this state are the use of big words, unusual words, even words coined for the occasion and a tendency to write sentence after sentence when only one is needed. A manuscript brought forth under such adversity may have little resemblance to an author's usual style of speaking and readers must stay overtime to understand his work.

Many remedies for writer's fright have been suggested including more practice in writing or absolute mastery of technique but none is more practical for a busy doctor than critical reading and re-reading of the new paper. Each time an author goes over his brain child he should listen for stilted language and needless rambling. By trimming away the fat and frills his paper gradually becomes shorter and better. The smallest words in the most compact sentences convey information more surely to a reader's mind.

Medical papers should be written as though ink were rationed, paper priceless and ideas a dime a dozen because the reader's time is his most valuable possession.—*C. B. Dawson, M.D.* □



It is a source of disappointment to me that I cannot "stump the state" and meet everyone of you this year. Obviously this would be a full time job and even then I would still miss many of you. So I hope you will accept these letters through the year in lieu of a call on you in your office or a friendly handshake at a meeting.

Also, will you please allow this page to take the place of a personal Christmas card. We wish everyone of you a marvelous Christmas and the best of New Years. All of your officers and staff appreciate the fine backing and support we are receiving from you this year.

Sincerely yours,

Maxwell A. Johnson MD

OSMA JOURNAL/scientific

Children's Reaction to Christmas

JAMES T. PROCTOR, M.D.

Children often respond in covert and personal ways to elements in the Christmas festival, which are usually not obvious to adults.

MY CLINICAL INTEREST in the complex festival of Christmas began over a decade ago when I recognized that the reaction of children in psychotherapy to Christmas is not always conventional. Further clinical investigation showed that the discrepancy between their covert reactions, and the mythologically expected attitude had to do not only with the children's level of maturation, cognitive development, and psychosexual organization, but also with their general relationship to their parents and siblings. These factors are reflected in their reaction to the Christmas festival itself; in their reaction to gifts and the relation of gifts to sibling rivalry and envy; and their reaction to various cultural symbols, especially Santa Claus.

The purpose of this paper is to review briefly something of the history and evolution of the Christmas festival, to note something of the pertinent literature, and to elucidate some of children's covert reactions to the social complex known as Christmas. The clinical notes to be presented are a sample selected from a considerable body of anecdotal material collected in ongoing psychotherapy the past decade, and from 25 taped interviews with "normal" (not in therapy) children. This material is brought to your attention at Christmas time as it is truly seasonal. Our interest and intrapsychic investment in Christmas increases following Thanksgiving and reaches a peak just before Christmas, diminishing rapidly thereafter. The illustration showing children's sequential drawings dramatically demonstrates this matter.

Most of the Christmas customs now prevailing in Europe and America are not genuine Christian institutions, but heathen ones which have been incorporated or tolerated by the church.[1] Various religious and cultural rituals have been condensed into our modern Christmas, and it should be noted that the winter solstice (December 22) has always been a favorite time for festivals, as

have other cardinal points in the earth's rotation around the sun: The summer solstice (June 22), and the vernal and autumnal equinox (March 21 and September 23). Man has always tended to associate changes in the sun's apparent power with his own most vital activities. The rebirth of the sun (the winter solstice) has often been the greatest reassurance of eternal hope. December 25 was listed as the birthdate of many Persian, Phoenician, Egyptian and Teutonic gods; for example, Osiris, Adonis and Mythra. The theme of all these religions was of a young savior-god who died once or periodically and was resurrected, thus assuring eternal salvation for those who believed in him. When the Roman pagan orthodox religion began to wane, a number of competing near Eastern ones began to crowd in, one of which was Christianity. Very early, the church realized people leaned toward traditional festival dates and consequently Christmas was set around the winter solstice. The church's decision to set Christmas at this time was in line with the general policy of synchronizing or absorbing pagan customs.[2] However, both St. Augustine and Pope Leo the Great found it necessary to rebuke Christians for still associating Christmas with the rebirth of the sun. Parenthetically, on May 11, 1659 the General Court of the Massachusetts Bay Colony passed a law forbidding the celebration of any such day as Christmas, which the Puritans considered a secular bacchanalian feast.[3]

Our Christmas feast, however, seems to stem from two major sources: The Roman Saturnalia and the Teutonic yule feasts. The Saturnalia provided a model for most of our customs. It was a time of general joy and mirth. Schools were closed and no punishments were inflicted. Rank was laid aside, slaves sitting with their masters or the masters actually waiting on them, and the utmost freedom of speech was allowed. All classes exchanged gifts, the commonest of which were wax tapers and clay dolls, the latter being especially for children.[4] From the Teutonic, yule time was the darkest time. Man was threatened by demons, especially demons of the air. There was the cult of the dead and All Souls' Day, but much of this was incorporated into yule time to change it into a good reception for friendly ghosts. All preparations for Christmas were completed by Christmas Eve when the family attended church. It was then that the dead came to determine if all was in order, and if so would take their meal from the ready table. The fertility of the year depended on good reception of the dead.

This anthropologic sketch indicates that "Christmas customs are an evolution from times that long antedate the Christian period, a descent from seasonal, pagan, religious and national practices, hedged about with legend and tradition,"[5] a remarkably persistent festival and fantasy system.

To consider some of the psychiatric literature concerning Christmas several papers are pertinent to our theme, although the material is largely derived from work with adults: Jones'[2] early paper is excellent and expresses the rebirth concept in Christmas. Ferenczi,[6] of course, contributed greatly to understanding the psychological reactions to holidays in his paper on Sunday neuroses, in which he described individuals who enter holidays with excessive wantonness of act or fantasy. These individuals then become threatened by potential unrestricted release of instinctual drives, which results in untimely depressions or small hysterical attacks. Boyer[7] in his article on Christmas neurosis contends that depressions which occur during the Christmas season primarily result from reawakened conflicts related to unresolved sibling rivalries. Jekels[8] surmised that the introduction of the festival of Christ's nativity indicated a growing tendency to regard the Son as equal with the Father. Eisenbud[9] described two female patients in analysis who suffered from intense penis envy, one of whom had been promised that Santa would bring her whatever she wanted. She consciously wished for a penis and was bitterly resentful when her ambition was not realized. Sterba[10] illustrated similarities between the celebration of Christmas and the customs surrounding childbirth. He was impressed by the long period of preparatory excitement, secret anticipation, the last minute flurry of preparation, the prohibition about entering the room containing gifts, and the relief afforded by delivery which characterizes both events. Cattell[11]

described an anxiety-depressive syndrome persisting from Thanksgiving through New Year's day, reaching its zenith at Christmas. Soreno[12] in a very pessimistic article describes the absurdity of Christmas and discusses the deception perpetrated on children by adults as a device to control them. It is interesting to note parenthetically that Marx and Engle[13] were concerned with the use of myths and religion as control devices, referring to them as opiates and illusions, the need for which required exploration and resolution. Soreno also amusingly and insightfully describes the office Christmas party as a bibulous brawl held in the office on the last day preceding the Christmas vacation, on the pretext of exchanging gifts. At this party, executives and secretaries, by dissolving their inhibitions in alcohol, yield to the sexual fantasies which have preyed upon them all year. The outcome is an obstreperous, peripheral sex play in which the barriers of rank and status are temporarily let down, although girdles, make-up, and lack of adequate furniture remain as obstacles. This leads Soreno to believe that the Santa celebration epitomizes flight from religion. Monke[11] sets forth several illuminating ideas which I will present in some detail since they closely parallel my own. He has been interested in the question of how social customs are an extrapolation of the inner problems of civilized man. It is his thesis that whatever man is symbolically resolving in the custom, is organized in rituals and ceremonies to satisfy ambivalently held and frustrated human needs and wishes.

In Monke's experience patients usually identified with the children who received gifts, as an expression of their own regressive wishes. Using himself as reference, he asks, "What was the anxiety of which the children had relieved me? How did the ritual express the diad of a psychic conflict?" Peoples all over the world acknowledge the end of winter and the beginning of spring in various rituals expressing somewhat the same feeling. The polarity involves the diad of "the dead of winter" and "the beginning of life in spring"; after the threat of death, is the promise of life. He proposes that the Santa Claus ritual exists as a vehicle to transport into expression civilized man's anxiety about his impending mortality, the cessation of the good and noble "him," the separation of "him the living" from that in the ongoing society with which he has psychically identified and in which he lives. Man has considerable psychic and mental trouble in visualizing and dealing with the fact that soon he will cease to exist. The Santa Claus ritual is a societal symptom of this anxiety and a symptomatic resolution of it. In the ritual, the fantasy deals not with mortality, but with the presence of children. Unspoken is the fantasy thought that the perpetrator of the ritual will have died in body only, his spirit will go on in the child. Only a child can serve this symbolism. Only a child can be the object of this libido investment. He proposes that the profoundly moving ecstasy which a woman experiences at delivery of her baby is akin to the ecstasy which Santa Claus displays in slightly disguised form in his joviality. But the man with no such experience in giving birth, requires a more tangible ritual to deal with his anxiety about mortality. He is the man who has reached the end of life. Who other than an old man can wholly love a child and be joyous that there in the child is himself. Santa Claus is the old man in each of us. Coming down a chimney is a reversal of the emergence from the birth canal. Children can never understand the phenomenon of the chimney, yet adults continue to inculcate them with the idea year after year. The rebirth concept is further vividly expressed in the cultural New Year fantasy of the past year being an old man who is on his way out and dying, and the New Year being a baby emerging into the world. The New Year celebration seems to be an integral part of the Christmas

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Following his graduation from the University of Kansas School of Medicine in 1946, James T. Proctor, M.D., joined the faculty at the University of North Carolina School of Medicine where he was connected with the Department of Psychiatry for eight years. He is now Medical and Training Director at Children's Medical Center in Tulsa. His medical affiliations include the American Psychiatric Association, the American Orthopsychiatric Association and the American Association of Psychiatric Clinics for Children.

festival in our modern society and actually brings the Christmas celebration to a close —and rebirth.

Several other comments about our Christmas festival seem pertinent. The Krampus concept has all but disappeared in America. Krampus brought sticks or switches for the stockings of bad children in the older German legend. For a time this concept was fused into a single Santa image, namely that Santa would bring switches and put coal in the stockings of bad children, and other variations. This aspect of Santa is being progressively pared off so that now Santa is only a giving figure, or at the worst a withholding figure. This is of interest as American Christmas at least, demands complete suppression of all negative feelings ("better not cry, better not pout") without any culturally prescribed outlets. This seems in line with various trends in our society in which the bad, punishing figures or concepts are being deleted; for example, the Episcopal Church recently has debated whether to delete the word "devil" from their Handbook of Common Prayer. They have decided to leave the word for the moment, but apparently they plan to delete the devil from their philosophy and worship during the next several years. Another point is that Santa is possibly unconsciously perceived as a sacred figure. Santa satisfies Durkheim's[15] definition of a religious object: The distinction between the sacred and profane is made with regard to him, belief in him is closely related to a set of rites, and these rites are acted out in an organized social group, the family. In addition, some little experiments done by Shlien[16] in which he demonstrates children's and adults' reluctance to eat cookies in the image of Santa Claus, tend to indicate a taboo and Santa's sacred nature. Hagstrom, in an excellent paper,[17] points out that Santa does not seem to represent a natural object as the Australian totems do, but rather seems to represent the social group which is most important to small children: The nuclear family. Santa Claus rituals are intimately involved with the family and seem to serve its solidarity. The most important ritual associated with Santa is gift giving or the exchange of gifts or cards. The gifts and cards represent positive sentiments which often do not directly affect everyday behavior, yet are important in the nuclear family and serve the additional purpose of maintaining contact with the extended family and distant friends. However, some of the "commercialism" attributed to modern Christmas probably rests on the feeling that alleged gifts are often forms of bribery or barter.

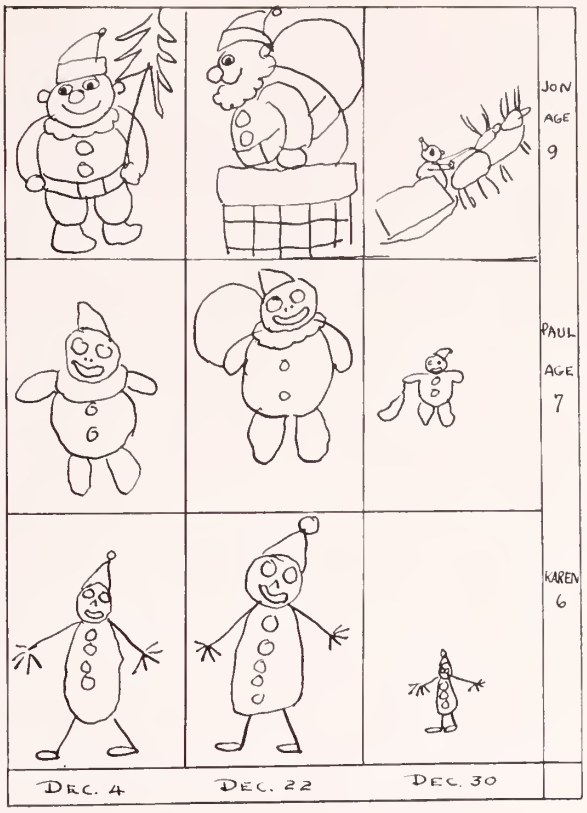
Davey, a gifted and intuitive boy of 12 who was spontaneously writing a school paper about Christmas, developed several themes in a taped interview. He began by talking about the Christmas spirit, noting "it's excitement and a little bit frightening." He went on that the excitement itself is a little frightening, but that the underlying fear was that he would not get gifts, which would mean his parents were punishing him, or that they preferred his brothers. Davey also discussed his concept that Santa is funny and mysterious, like a science fiction television show that deals with fantastic stuff. He pointed out that there was not any physical thing that could hurt you, but then thoughtfully added that his six-year-old brother feared Santa could actually hurt both of them in some way. He also disclosed that his initial awareness there was no Santa came slowly without shock, but that the knowledge almost changed the Christmas spirit for him. He observed that the Christman spirit does change as one grows older, that Christmas is for giving, but smaller children don't really know that. Davey said he recognized the actual significance of Christmas only when he stopped believing in Santa, but paradoxically continued that children up to about 15 are more interested in presents. In closing, Davey insightfully indicated that there are different kinds of children such as babies, preschool and school children, and teenagers, and that they don't all believe the same things about Christmas. During the interview Davey also divulged that younger children enjoy the Santa myth, and he therefore does not disillusion them as his ten-year-old brother, Robby, was doing with the six-year-old brother. However, Robby's version is somewhat different.

Robby, Davey's ten-year-old, able and intensely competitive brother, came willing for a taped interview at Davey's suggestion and

invitation. He explained that Christmas is different things, such as presents, Jesus, and excitement. He disclosed that on Christmas Eve he gets so concerned about his gifts being well received, that he can't go to sleep until nine o'clock or so. Robby said he only slowly realized there was no Santa and was not too disappointed, that everyone has to learn sometime. He reported that he initially heard there was no Santa from Davey (!). Although he did not really believe him, it spoiled Christmas in a way, and that's why he hasn't told his little brother (!). He related his full awareness that there is no Santa, to the fairy deal when you lose a tooth. His parents accidentally awoke him while trying to exchange money for the tooth under his pillow, which led him to realize that there is neither a fairy nor a Santa.

Parenthetically, this leads to a fascinating complex I can only mention in passing; that is, the relation between masturbation, loss of the first deciduous tooth, the concurrent giving up and thus loss of certain infantile object ties, and here tied in with being awakened by the parents, and learning there is no Santa. In this regard, several children in therapy have been very angry that they have been tricked about Santa, connecting it with sexual fabrications, stork myths, and similar deceptions by adults.

John, a nine-year-old boy, wanted clothes for Christmas, but was ambivalent about getting useful things versus toys. He at first thought the best part of Christmas was getting gifts, but quickly switched to the importance of giving, emphasizing that giving is good. In discussing Santa, he spontaneously revealed a somewhat garbled fantasy that if you want to find out whether there is really a Santa you could set up anti-aircraft guns and barbed wire around the fireplace. With pronounced resignation, he then added that Santa would probably come in the front door (and I silently speculated that Santa in this context was a symbol for the new sibling that can't be excluded). John did not mention religion until it was introduced (indeed, the religious aspects of Christmas seem of little immediate importance to children and seldom appear in their spontaneous thoughts and fantasies), but then he launched into stereotyped ideas of original



sin, Christ four thousand years later, and eating the apple. He said there was no Santa then, only two people (the sibling conflict again?). John was wistful about Christmas, but I saw a marked conflict between growing up (clothes and giving) versus being a child (toys and getting, and the wish to cling to the magic of Santa). When I terminated the interview, he closed with the following anecdote: "There's a joke going around. Tomorrow is Christmas, October 31. Oops! I'm mixed up, that's Halloween. You might have a ghost come, you might get one in your stocking."

Susan, a three and one-half-year-old girl and one of the "normal" children interviewed, was very active and somewhat distractible at first. When I asked what she wanted for Christmas, she said she wanted a magic lamp, but dramatically and simultaneously both hands went vigorously to her genitals. Later she said she wanted a kitchen set. She would not draw a lamp, so I asked if the magic lamp was something her brother had. She nodded yes, and said the blocks she was playing with were like brother's. She became much warmer at this point.

Mark, age four, had for some months before Christmas wanted a baby of his own. He was told that he could certainly have a baby when he grew up, but he emphatically stated he wanted it now. He was angry at this frustration and cried several times. Mark was discouraged by his parents with explanations that babies were a great deal of trouble, they cry, make B.M.'s, and you have to get up with them at night. However, Mark was quite willing to change diapers and get up at night. His eight-year-old brother explained that he could not have a baby because he is a boy, but mother could make one for him if he would ask her. Mark was adamant. He wanted his own, and he wanted Santa to bring him a real live baby for Christmas. The entire family repeatedly confronted him sympathetically with reality, but he persisted in his belief that Santa would gratify his request. Mark said nothing about Santa's negligence for some weeks after Christmas, but then spontaneously said at dinner one night that he guessed Santa ran out of babies at Christmas, and thus he did not get one. He seemed content with this solution at the time, but the theme recurred in progressively attenuated form.

Kirk was phobic of Santa from age two through six. He did not want to see Santa or to be in the same store with him, and he did not want Santa to come into his home to bring presents.

Bill, a boy of 14 in intensive psychotherapy for stuttering, was discussing Christmas and the parental gifts he anticipated for himself and his siblings. When I suggested he might be comparing gifts to determine which siblings were preferred by the parents, he was horrified and blurted out that learning such a thing would be like finding out there is no Santa Claus.

There is much more that could be said about children's reactions to Christmas, but let me summarize my impressions at this point, some of which have not been adequately documented in this brief paper.

A. Children's expectations of Santa and their attitudes about the Christmas festival differ with their level of maturation and psychosexual development. The very young child consciously or preconsciously wishes for direct instinctual gratification. The girl may, for example, wish for a penis, and the boy for a baby, and both may and probably do wish for direct oedipal fulfillment, but as the child develops he progressively becomes better able to accept more remote symbolic substitutes. The sequence seems to be: The conscious wish for direct instinctual gratification till about age four; from four through seven years or so the wish for direct gratification fades, and there is a progressive shift to the wish for gifts, largely toys; from seven through 12 years the conscious wish gradually moves toward receiving practical and useful things; at about 12 years the emphasis on receiving begins to yield and the child recognizes the importance of giving to others. This last phase is probably not complete until well into the teens (Davey's estimate of 15 years seems too early). Children under 12 are preoccupied with "getting" and seem little concerned with the religious aspects of Christmas. I speculate that genuine religious cognizance develops only as a direct function of emotional maturation, which can be observed by following the shift from "getting," to "giving." The concept of giving itself further evolves from the giving of things, to giving love, emotional support, and other such crucial intangibles.

B. Christmas is not always the happy time for children it is reputed to be. They are often very anxious to receive the gifts they have requested, as a proof of parental love or their preferred status in the sibling hierarchy. They frequently avoid the test by asking only for what they know the parents will give. This is at times a fully conscious evasion, but more frequently it is an unconscious device. In this way they allow themselves to be transitorily reassured, avoiding anger and depression, and thus preserving their relationship with the parents.

C. There are always unconscious wishes underlying the manifest, conscious Christmas requests. In consequence, some degree of disappointment, narcissistic hurt and anger always ensues, since the unconscious wishes for instinctual gratification are never met, and probably can't be in real life. The hurt may be negligible to severe, depending on the degree to which the child seeks direct gratification for the wishes and fantasy

systems, and the degree to which he can accept substitutes. For example, if the female still directly wishes, albeit unconsciously, for a penis and is unable to accept any substitutes (dolls, guns, a musical organ with which to play) she is doomed to disappointment, rage, and depression. The same is true in either sex if the goal is oedipal fulfillment.

D. Santa Claus is a complex personal and cultural symbol with multiple, simultaneous functions at diverse levels of awareness. He is not always a good, magic, all-giving parental image. For example, sometimes he evokes the uncanny in children, and they fear he will actually harm them (Davey). He can also be frightening and phobically avoided when he becomes the object onto which family conflicts are displaced to preserve family relationships and solidarity (Kirk). In other circumstances he may represent the unwanted sibling that cannot be excluded (John).

E. Some children in latency who no longer believe in Santa, resent the myth as a subterfuge, deception, or lie. This group frequently associates the Santa myth with that of storks bringing babies, and the parents' secretiveness with its implied prohibitions about sexual activity and procreation. There is evidence that the adult pact with the child requires the child to be good and conform to the prohibitions and rules of the parents and society, relinquishing direct instinctual strivings. If he does so, the child is implicitly (if not explicitly) promised whatever his heart desires, which unconsciously means instinctual gratification. The parents indicate to the child that if he controls his aggression and sibling rivalry, contains his dependency needs, and renounces oedipal drives, that these very instinctual wishes and impulses will be gratified. Reality, of course, prohibits direct gratification, and when the parent offers symbolic substitutes which are remote from the unconscious wishes, the child may feel he has been betrayed and cheated, or at best, duped.

F. The cult of the dead still actively intrudes into the Christmas fantasies of some children (John), and certainly is a part of the cultural complex of Christmas, notably in the ever popular "Christmas Carol," by Dickens. It would be fascinating to know more about this, but it seems that any question asked (for example, what are children's reactions to Christmas) expands indefinitely. Rather than getting into the situation in which Frazier found himself when he tried to understand the succession of the priesthood at Nemi, I will stop and leave the next 20 volumes to someone else. □

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Evaluation of Disability of the Back

EARL D. McBRIDE, M.D.

Wide variations of medical opinions and statutory settlements of back disabilities can be improved if the medical testimony is confined to the per cent of permanent physical impairment and loss of function leaving the effects on social and economic handicaps to the judgment of the court.

THE PHENOMENAL evolution of hazardous living and working midst the present day machines, implements, tools, and facilities of rapid transportation has raised the frequency of accidental injuries to unbelievable proportions in the index of human ailments. Furthermore, the legalized provisions for extending retribution to those whose disabilities are covered under some form of insurance have given rise to overwhelming responsibilities for employers, insurance companies, United States Government, the law profession, and the medical profession. Claims of permanent total or partial permanent disabilities covered under the Statutes of the Workmen's Compensation for injured employees, health and accident policies covering the public in general, old age pensions, military pensions, and litigation in the common court of justice over claims of damages of personal injury have jammed the judicial facilities and added great specialized responsibilities to the professions of law and medicine.

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Fortunately, there has come about a closer communication between these two professions, law and medicine. Each tends to retain its hidebound semantic expressions clothed in ancient vocabularies and Latin syllables, but it has become necessary to cross the bridge of mutual reciprocation and understanding in order to cope with the many uncertainties and controversial points that may arise in seeking justice through litigation.

Today our discussion is limited to disability to the back. Claims for injury to the back are very common and notoriously controversial. The functions of the anatomical structures of the back are not as perceptible as those of the extremities. A study of the anatomical components of the back and their mechanical action are involved in an amazing musculoskeletal system capable of performing extraordinary maneuverability and strength in the performance of work.

The flexible framework of the intervertebral structures of the back is provided by multiple joints held together by muscles and fascia. Motivation is accomplished through the muscle action by means of a motor and sensory network of nerves originating in the brain and communicated through the spinal cord and their nerves to their respective destination in specific areas. The sympathetic nervous system performs automatically in response to the pain stimulus. A vast system of arteries, veins and capillaries circulate nutritive supplies to every living cell within the back structures.

VARIOUS INJURIES AND DISORDERS OF THE BACK

Some of the more equivocal problems in evaluation of permanent physical impairment and the resulting disability to the back are:

Strains	Muscle rupture
Sprains	Congenital anomalies
Contusions	Fracture dislocation
	Herniated disk

The greater variety of opinions is when the claim of injury is not definite and is not supported by demonstrable evidence of injury. The term strain should be distinguished from that of sprain. A strain may arise from over-exercising or over-stretching the fibrous tissue about a joint or a muscle. The reaction may be an acutely painful "catch" in the neck or back, or merely a severe dull aching type of persistent pain. Local swelling may or may not be found. The rigidity of muscle spasm may indicate an intracellular effusion and swelling. In many anstances the onset of pain does not immediately develop at the time of the strain. Medical treatment may not be sought until several hours after the accident. At this time rigidity of the muscles through muscle spasm has occurred and on the morning following the injury the patient may say that he can hardly get out of bed. An uncomplicated strain of this type usually recovers in a few days or at least a week or two, because no actual tissue damage has occurred. If a more severe injury is suspected admission to the hospital for observation and thorough roentgenographic examination is advisable. Sprain is a more severe injury than strain, in that integrity of the ligaments is interrupted by partial tearing apart or from pulling the ligament loose from its bony attachment around the joint. Hemorrhage followed by a localized deep-seated hematoma may result and cause severe persistent pain and muscle rigidity. The more common site of such injuries is in the neck following end-to-end collisions of two cars. In the so-called whiplash injuries, evidence of fracture or any other tissue changes are seldom demonstrable by roentgenographic examination. The estimate of the extent of violence may give a clue to the severity of tissue damage. Many times a neck brace or support worn too long creates undue stiffness which gives rise to pain when the patient tries to return to work, so that the period of temporary disability may be longer then considered normal. Experience has shown that even the more severely painful sprains of the neck gradually become totally free of pain within a period of one year where treatment has been adequate and disuse from over-bracing is not a problem.

Muscle rupture *per se* is not a common injury to the spine. Muscle damage is often found to be severe during operations on fractures of the spine. Rupture of muscles at their attachment to the bony structures of the spine may be severe and surgery is occasionally necessary to investigate the extent of trauma and to dry up the wound by ligating or electrocoagulating the bleeding points. In the lumbar spine fractures of the transverse processes may occur as a result of direct severe trauma. Usually there is considerable tearing of the muscles followed by infiltration of blood into the surrounding tissues. It is often surprising how minor the pain complaints are after a day or so of rest in bed for the treatment of such cases. Ordinarily the patient may return to manual labor within four to eight weeks from the time of injury.

CONGENITAL ANOMALIES

Unstable Spine: Congenital anomalies are a common clinical finding in the lumbosacral spine. They often give rise to the diagnosis of "unstable spine." There are numerous types of anomalies, but those more commonly associated with so-called unstable spine are asymmetrical facets, sacralization of transverse processes of the fifth lumbar vertebra, and spondylolysis of the pars interverticularis, or displacement of one vertebra on the other as in spondylolisthesis. A detailed history usually reveals that there were some previous acute minor attacks of pain which were perhaps not severe enough to interrupt work, then finally a more severe disabling attack occurred coincident with an unusual twist or act of lifting which ordinarily might not be violent enough to produce a severe injury. Physical examination and roentgenograms may reveal a spondylolisthesis or other anomaly.

If there is unusual mental apprehension or a neurotic tendency it will be very difficult to reconcile the injury with the congenital anomaly either in treatment or in evaluating of the claim of permanent disability. Often some compromise on the part of all concerned is necessary.

FRACTURES OF THE SPINE

Fractures of the spine, with no damage to the spinal cord, may present problems in the choice of treatment. In the past traction and forcible extension under anesthesia were considered the classical treatments for compression fracture of vertebral bodies of the spine. These cases frequently were confined to bed or in plaster casts and braces for an extraordinary time, resulting in atrophy of muscles, ligaments and all other tissues of the back. In many instances it was thought that treatment was worse than the injury, and gradually more and more surgeons began to treat the more moderate compression fracture of one or two vertebrae without forcible correction, but the bed rest and support only long enough to satisfy the patient's complaints of pain. As long as the pain can be tolerated and there is no paralysis of the extremities, such treatment usually results in much less permanent disability than when greater effort is made to restore anatomical congruity and alignment. Of course, when the vertebral bodies are comminuted greater caution must be used and the more intense treatment of immobilization is usually necessary. When the pain persists more than six or eight months a fusion of the fractured vertebral bodies is indicated. In fractures with dislocation and cord injury, the seriousness of injury depends upon the extent of paralysis. Fractures of the spine will heal but the paralysis may remain to cause permanent physical impairment. The permanent disability will be based very much on loss of use of the extremities. The involved bony structures may require fusion.

HERNIATED INTERVERTEBRAL DISK

The discovery of the herniated intervertebral disk, rather suddenly, caused one of the most controversial clinical syndromes encountered in the treatment of industrial back injuries. This discovery almost totally eliminated the so-called sacro-iliac strain or subluxation from the responsibility of the type of lumbosacral pain in which there was muscle rigidity with unilateral body list and pain radiating along the course of the sciatic nerve in the back of the leg, outer side of the thigh and calf, and into the inner or outer side of the foot and toe. The importance of the nucleus pulposus was studied by Vesalius in 1555. Goldthwait pointed out its vulnerability in 1914; but it remained for Mixter and Barr in 1935 to bring to light the full clinical significance of the classical symptoms and their spectacular relief by surgical excision of the herniated intervertebral disk. The seriousness of this lesion has been greatly over-estimated, and too often a disability has been prolonged unnecessarily. It is very uncommon to find a herniated intervertebral disk that can be truly the result of a single lesion. Fortunately, specific treatment can be rendered to the well localized area of herniated intervertebral disk with prompt elimination of pain, and spectacular recovery in the ability to work. Complications in some cases arise in which fusion is required for immobilization of the involved area.

SYSTEMIC DISORDERS

It is not uncommon to find systemic disorders superimposed on an alleged injury to the back. The examining physician must direct his examination and treatment in an attitude of sincerity and differentiate as

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nearly as possible the influence of the disease and the extent of real injury, if any. In most such patients the symptoms are not exactly characteristic and there is evidence of exaggeration and other factors which make it quite plain that the diagnosis of true injury is questionable. There are other instances when superimposition of a systemic condition may be present and prolong the disability by creating symptoms which simulate injury or are responsible only for the symptoms and disability. Such conditions as diabetes, gout, urinary infection, enlargement of the prostate, peptic ulcer, anemia, syphillis, osteomyelitis, rheumatoid arthritis, and osteoarthritis must always be kept in mind when examining a patient for an injury in which the clinical signs are very vague. In many instances the patient should be hospitalized and examined by consultants in appropriate fields for clarification.

THE RATING OF PERMANENT DISABILITY TO THE BACK

The words physical impairment are medical. The word disability is a statement of a legal condition. Medical opinion must evaluate the permanent physical impairment. It is the duty of administrators of the law to adjudicate the disability. The total disability from the legal point of view is generally established on a basis equivalent to loss of both eyes, both hands, and both legs. In Oklahoma, total permanent disability is established as 500 weeks. Total disability to the back would mean that the physical impairment would totally and permanently prohibit the working capacity of the injured man. Partial permanent physical impairment would imply a loss less than 100 per cent. Ratings for injuries to the various sections of the back cannot be pegged to a specific per cent rating as is the case with extremities. However, when evaluating an impairment of the back less than 100 per cent, it is sometimes helpful to compare the severity of the disability with the specific evaluations of total loss of use in other parts of the body. For example, total loss of a thumb in Oklahoma is specified as 60 weeks or 12 per cent of the whole body. Amputation of one arm above the elbow is 50 per cent loss of the body. Total loss of the index finger is 35 weeks or seven per cent of the whole body. By comparing these proportional ratings of disability to the extremities one can better comprehend an equitable percentage justifiable in the permanent partial disability to the back. One reason for differing opinions on the percentage rating of a disability is that doctors are not accustomed to measuring the severity of disease or injuries in a percentage rating. The following table consists of percentages applied to words commonly used to describe the severity of a condition.

0	Negligible	50	Severe
5	Mild	60	Quite severe
10	Minor	70	Very severe
20	Mediocre	80	Extremely severe
30	Moderate	90	Profoundly severe
40	Substantial	100	Total

Some examples of rating as suggested in the Manual for Evaluation of Disability published by the Academy of Orthopaedic Surgery are:

Surgical excision of lumbosacral herniated disk.
Good result. No sciatic pain.
No fusion, ten per cent.
With fusion, 15 per cent.

Cervical spine, persistent muscle spasm, rigidity, 15 per cent.

Pain substantiated by loss of anterior curve of neck as revealed by roentgenogram, whole body, ten per cent.

Herniated disk, lumbosacral region, disabling acutely painful episodes, with body list, radiating sciatic pain tests positive. Temporary recovery five to eight weeks, five per cent.

Lumbar spine, persistent muscle spasm, body list, sciatic pain, degenerative joint changes of lipping about the vertebral borders, ten per cent.

SUMMARY

A brief description of some important points to be considered in evaluating disability to the back has been presented together with some examples of rating percentages of some typical disabilities. □

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Chronic Disease Program for Cleveland County, Oklahoma

YALE E. PARKHURST, M.D.

Organized medicine, public health and medical education must have the leadership necessary to meet the manifold needs of an aging population.

OBJECTIVE

THE PURPOSE of this paper is to develop a sequential formula for a possible solution to the problem of a need for a chronic disease program in Cleveland County, Oklahoma.

In the United States during 1925, the Metropolitan Life Insurance Company paid nearly one-half of its claims for nursing services to policy-holders with acute or communicable diseases. Only five per cent of the claims were for chronic diseases. In 1945 the percentages were 14 and 28 respectively.

During the period from December 1, 1961, to October 1, 1962, a time study in 16 counties in Oklahoma revealed 39.4 per cent of the entire nursing services in the 16 counties was devoted to chronic illnesses.

GENERAL CONSIDERATIONS

Chronic disease has been defined as "a disease that may be expected to require an extended period of medical supervision and/or hospital, institutional, or supervisory care."[1] With the dramatic changes which have occurred in the practice of preventive medicine and public health during the past several years, there have been associated changes in migration levels, birth rates, and life expectancy which alter society's attitude toward chronic disease.[2]

Hospitals and related institutional health facilities need to be involved in chronic disease program development.[3] These include all forms of hospitals, nursing homes, physicians' offices, convalescent homes, boarding homes with special health facilities, organized home-care service, public health centers, rehabilitation facilities, outpatient services for hospitals, and industrial health programs.

There has been an increased utilization of hospital beds in spite of advances in medical science. This has been related to the following: (1) increased utilization of radiography in diagnosis and therapy, (2) increased numbers of surgical operations which can be performed, (3) increased hospital usage by an aging population,[4] and (4) the observation that more and more Americans are willing to forego other satisfactions in favor of health insurance. Good health is now regarded by many as another "inalienable right."

A chronic disease program is felt desirable for Cleveland County not only because of the diversity of the occupational types within the county, but also because of the diversity of social and economic levels which these groups represent. A further important factor is that Cleveland County has the geographic and population distribution in which this program could be fruitful.

It should be noted that there is some variation in the extent of detailed presentation in different parts of this paper. This is caused by the fact that certain areas of clinical research involving chronic disease and of statistical information concerning Cleveland County has been studied more intensively than others.

GOALS

The primary goal of a good chronic disease program is to reduce to a minimum the morbidity, mortality, and dysfunction related to chronic disease.[5] Areas of program development to accomplish these reductions should include: (1) maintenance of nutritional standards with possible assistance in selecting, buying, and preparing food; (2) extension of industrial medical services; (3) expansion, further development, and increased utilization of screening techniques in early detection of chronic disease;[6] (4) augmentation of personal hygiene instruction;[7] (5) greater utilization of behavioral scientists in popularizing knowledge of adjustments necessitated by aging;[8] (6) accrual of periodic health examinations; (7) greater affiliation of available sight, speech, and hearing services; (8) initiation of convalescent services for the chronically ill on the basis of need;[9] (9) institution of public education in the use of leisure time; (10) intensification of research on the local level into the changing problems of chronic illness;[10] (11) addition of social services to the community rather than a segment thereof; and (12) expansion of therapeutic, rehabilitative, and supportive services based in three areas; namely, the hospital and related institutions, the physician's office, and the home.[11, 12]

The following are conditions in which alterations or adaptations of the nutritional requirements of an individual may be necessary:

I. Faulty diet.
  A. Poverty.
  B. Ignorance.
  C. Idiosyncrasy.
  D. "Nature cures."
  E. Gastrointestinal disorders.
  F. Fear of eating certain foods.
  G. Chronic alcoholism.
  H. Anorexia.
  I. Prescribed dietary restrictions.

II. Faulty preservation and preparation of diet.
  A. Heat.
  B. Bright light.
  C. Aqueous extraction.
  D. Alkalis.
  E. Exposure to air.

III. Impaired digestion or absorption.
  A. Lack of secretions: Gastric, biliary, pancreatic, intestinal.
  B. Hypermotility.
    1. Persistent vomiting.
    2. Diarrhea.
  C. Abnormal mucosa.
    1. Atrophy.
    2. Edema
    3. Specific intrinsic mucosal changes.
      a) Sprue.
      b) Celiac disease.
  D. Therapeutic agents.
    1. Colloidal absorbants.
    2. Oils.
  E. Mutilation, widespread disease of the gastrointestinal tract.

IV. Interference with storage and intermediate metabolism, chronic liver disease.

V. Interference with utilization, impaired circulation.

VI. Increased requirements.
   A. Growth.
   B. Pregnancy.
   C. Unaccustomed physical exercise.
   D. High carbohydrate diets.
   E. Intravenous glucose.
   F. Accelerated metabolism.
      1. Hyperthyroidism.
      2. Leukemia.
      3. Febrile illness.[13]

An industrial health program for a community can be as good as the physicians in the community are willing to make it. The management of a small industry may be slow to learn the advantages of a good industrial health program, but management will never learn these advantages if the medical climate of the community precludes this acquisition of knowledge. The industrial health program should be geared to the areas of management and workers as their needs warrant. An industrial health program should encompass the following features:

1. Periodic environmental survey of the industry.
2. Immediate care of injuries to prevent complications.
3. Assignment of job applicants to areas of work commensurate with their physical and emotional abilities.
4. Periodic physical examination and screening procedures.
5. An executive care program which maintains members of industrial management at the optimum health.[14]

"Let there be no mistake about it, if physicians do not undertake leadership and wise counsel in the promotion of good medical service for small industry, the public, seeing what has been done in large industry, eventually will demand a more equitable distribution of occupational health services by some other means."[15]

Screening techniques for detecting chronic disease should include but not necessarily be limited to the following:

1. Hemoglobin.
2. Urine, Bence-Jones protein.
3. Blood sugar.
4. Examination of a stained blood sugar.
5. Sputum examination.
6. Microscopic examination of the stool.
7. Papanicolaou smear of cervix.
8. Single lead cardiogram.
9. Photofluorogram of chest.
10. Gastrointestinal x-ray series.
11. Microscopic, bile, and concentration with dilution examinations of urine.
12. Height and weight.[16]

Personal hygiene instruction is perhaps the greatest opportunity for an individual to acquaint himself with preventive measures, screening procedures, therapeutic advantages, and adaptive processes available for the chronically ill.[17] The role of the parent or adult of today is many-faceted, not the least among these facets is that of maintaining his own functioning ability to an optimum. He also has the responsibility for protecting the health of his family. This involves being aware of and directly concerned with the health problems of the community in which he lives.[18] A popular awareness of the concept of chronic diseases as expounded by Stieglitz is needed: "Whereas the commoner diseases in youth have acute and florid onsets, obvious symptoms, and being of infective origin, they tend to be self-limiting and self-immunizing. The disorders frequent in later years are characterized by insidious and asymptomatic onsets, slowly progressive courses, and endogenous or at least non-specific etiology."[19]

The benefits of behavioral scientists popularizing knowledge of adjustments necessitated by aging cannot be over-emphasized. Any program, if it is to succeed, must be geared to the community or body politic in which it is to be functional. In order to popularize knowledge in a community, one must know the psychodynamics of the community. This entails knowledge of folklore, native therapeutic practices, variants involving economic health, social structure of the families, levels of education and educability, political structure of the area, and religious and philosophical climates including the basic value systems of the community.[20]

The eventual control of any chronic disease is related to provisions for early diag-

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nosis of the disease and for detection of certain causative mechanisms which predispose an individual to a chronic disease. Periodic physical examinations by the family physician afford the greatest opportunities for case-finding in the areas of chronic disease. The expansion of case-finding and education of the public concerning the problems of chronic disease can best be effected by a joint effort involving multiphasic screening programs for chronic diseases by local health departments and periodic physical examinations by family physicians.[21] Referral levels and procedures must be maintained under close surveillance of the medical profession in the community so that an optimum level of case-finding will be effected.

Between three and four per cent of the national population have deficits in speech, hearing, and/or sight. Most of these cases can be supplied with certain adaptive services or facilities which can make them more healthy individuals from the standpoint of economic, social, physical, psychological, and spiritual health.[22]

Convalescent care may be defined as a period of supervised health care in a group setting following a specific illness or injury, limited in duration and aimed at restoring the patient to maximum capacities.[23]

Through the assistance of representatives from selected agencies in the county, a program on convalescent care can be effected to (1) serve as a focal point of discussion of problems involving the convalescent, (2) promote sound fiscal bases for convalescent homes, (3) effect plans to meet the needs of specific, neglected groups, (4) establish liaison between the convalescent home, hospital, physician's office, and patient's home, (5) evaluate changing needs for re-adaptation of standards, (6) institute basic and continuing research in the capabilities, needs and resources as related to convalescent care, (7) maintain a public relations program of sufficient degree to keep areas of the community informed on changes in policies and personnel which will effect the over-all program.

The "Sunday neurosis,"[24] a lack of adaptive response to leisure time, is an increasingly well-known entity. The American socio-economic system stemmed from the frontier days of hard work, long penalties for idleness, and the idea that leisure was an evil to be tolerated only if it had been gained by work. The psychological reactions to the changes wrought by the shortened work period and the advent of vacation and retirement plans, which increase time for leisure, compound the problems related to the chronicity of certain diseases. Suitable procedures toward recognition, understanding, and constructive use of idle hours by the well, acutely ill, subacutely ill, chronically ill, and convalescent is needed to make life more productive and more meaningful.

Local level research into the changing enigmas of chronic illness should involve mechanisms for the following: (1) a clearing house for surveys, studies and reports of extent of need, facilities, costs and significant programs in action, (2) a unit to stimulate research in basic biological sciences, gerontology, clinical medicine, socioeconomics, psychosomatic medicine, and administration, (3) the development of standards and criteria for kind, amount, and cost of services, facilities, and personnel necessary for the provision of a chronic disease program, (3a) criteria to evaluate the adequacy of such programs, services, and facilities, (4) the establishment of an educational program for the medical and paramedical professions as well as the general public, and (5) assistance to various agencies at all levels in planning, organizing, developing, and maintaining necessary services on a coordinated basis.[25]

Social services for a community dealing with the problems of chronic illness must be dedicated to the proposition that the homeostasis of the individual and the body politic is disrupted when chronic disease appears in the community; disease symptomatology manifests the body's attempts to regain a state of equilibrium. Disruption of certain social evidences of stability occurs within the family when a case of chronic disease is present in the family.[26] There are many factors which contribute to the stability of the family. Some of these factors are: (1) unconscious motivations, (2) intrapersonal relationships, (3) interpersonal relationships, (4) cultural influences, and (5) economic status. Unconscious motivations in-

clude internal and external homeostasis as maintained through social relationships, economic support, education, and maintenance of health. In order to maintain an optimum chronic disease program, knowledge of the patient-family-community relationship is imperative and this involves utilization of the private physician, the public health physician, the social worker, the public health nurse, and such other persons as a specific condition might warrant.[27]

Care of the chronically ill patients who require hospitalization should be integrated into the general hospital. Cases not requiring hospitalization should be cared for in their homes or the home-equivalent by the use of an extra-mural hospital service. The hospital should be the central unit housing the necessary personnel and equipment to make definite diagnoses and begin such therapeutic and adaptive steps as are needed for the patient. Radiating from this central unit should be therapeutic and adaptive areas in the nursing homes, convalescent homes, and private homes as the needs of the individual patient warrant. The program must be sufficiently permissive to provide maximum effectiveness of operation in each area. The mode of operation should also provide for the avoidance of duplication of services within the county.[28]

The secondary goals of a chronic disease program are: (1) increase the spectrum of all public health activities and broaden the usefulness of preventive medicine,[29] (2) lead to the expansion of adult education in relation to preventive medicine and public health generally,[30] (3) make greater use of existing community resources.[31, 32]

The physiological and biochemical processes which lead to aging may be affected by all factors which have an effect on cellular metabolism. Because of this, the need for an understanding and expansion of present knowledge concerning (1) heredity, (2) the health of parents at conception, (3) the health of the mother during pregnancy and lactation, (4) any history of illness, (5) the nutritional levels of the individual, and (6) the socio-economic, physical, psychological, and spiritual environment of the individual is vital so that basic concepts in the art and science of preventive medicine can be practiced.[33] All fields of medicine are actually concerned with preventive gerontology.

The expansion of adult education in relation to preventive medicine and public health generally can be implemented through the following steps:

1. Effect program planning and evaluation through assessing the resources and needs of the community.
2. Organize and promote health education activities to develop groups for health action; establish liaison between all groups interested in health education; aid in formal education planning in schools, public health agencies, and areas desiring in-service training related to health; provide technical assistance to such groups which have formal education plans structured and functioning; help interpret the value of health activities to the community; give leadership in group-teaching and group-work practices, and effectively use mass media, library facilities, speakers, panels, and local health information centers.[34]

Any chronic disease program should have a secondary goal: The increased utilization of existing community resources. This should be effected through delineation of governmental officials and agencies concerned with health as well as the following community groups and organizations which may be of value in planning and conducting a health program:

1. Medical profession.
2. Paramedical groups.
3. Dental profession.
4. Osteopathic profession.
5. Optometric profession.
6. Legal profession.
7. Teaching profession.
8. Ministerial profession.
9. Pharmaceutical profession.
10. Civic organizations.
11. Fraternal groups.
12. Farm groups.
13. Industrial, managerial, and labor groups.
14. Partisan political groups.
15. Other professional and social groups.

The delineation of such organizations and groups should be followed by a concerted effort to involve them in specific areas of program development. A representative of each of these groups will serve as a liaison person

between the administrative personnel in this chronic disease program and the respective group they represent. The steps necessary to bring about the participation of these groups will be the subject of a subsequent entry in this presentation.

AREA DESCRIPTION: CLEVELAND COUNTY, OKLAHOMA

The development of a chronic disease program should be a community project.[29, 35] The over-all community of Cleveland County is multi-faceted in its social, economic, and cultural aspects.[36] Cleveland County had a total population of 53,524 at the time of the 1964 national census with 43,117 of the citizenry within Norman, the county seat. In Cleveland County, 8.6 per cent of the population is over 65 years old.[37] Cleveland County has eight distinct population groups on the basis of employment location and area identity.[38] These groups are:

1. The University group: faculty, 1,157; students, 17,172 (1966-67).[39]
2. Central State Griffin Memorial Hospital group: patients, 1,855; employees, 1,-146.[40]
3. The agricultural group: farms, 2,639; farm families, 2,805.[41]
4. The oil production group: over 500,000 barrels of oil monthly.[42]
5. The industrial group: industries, 76.[42]
6. The recreation and water resources group: Lake Thunderbird 6,000 acres.[43]
7. The independent business group: 700 businesses within the county.[42]
8. The commuters who actually comprise five groups in the county:
   a) persons living in Norman and commuting to Oklahoma City for work;
   b) persons living outside of Cleveland County, but working in Cleveland County. Most of these people live in either Oklahoma City, Midwest City, Del City, or Purcell;
   c) persons living in Cleveland County but outside Norman (*e.g.,* Moore, Lexington, Noble, or rural areas of the county), but who work in Norman;
   d) persons living in Norman, working outside the city limits, but employed in Cleveland County;
   e) persons living in one rural area but working in another rural area.[43]

The more urban areas of the county are Norman, Moore, Lexington, Noble, and a portion of Oklahoma City.

In Norman, the University of Oklahoma student enrollment constitutes a variable in the total city population. Norman has approximately 6,000 students in public elementary and high schools. There are between 300 and 400 students attending parochial schools.[43] The main grounds of Central State Griffin Memorial Hospital, a neuropsychiatric hospital, are located within the city. Norman is also the home of the State Cerebral Palsy Institute which has 48 beds for care of victims of cerebral palsy only.[44]

Moore is a buffer town between Norman and Oklahoma City. It is one of the nation's fastest growing towns from the standpoint of population. The 1960 census of Moore's population was 1,783. On January 1, 1963, it was over 9,600. On January 1, 1967 the population of Moore was 18,000.[45] Moore's economy is supported primarily by employees who commute to adjacent Oklahoma City, Midwest City, Norman, Tinker Air Force Base, Will Rogers Federal Aeronautics Agency, and the nearby lake development (Lake Thunderbird). Moore is also supported economically by local building programs, school developments, area farming, and area oil production.[45]

Lexington, at the south end of the county, has 1,500 inhabitants. There is no bonded indebtedness in Lexington. Most of the employed residents of this town work either at Tinker Air Force Base, Central State Griffin Memorial Hospital (main grounds), Central State Griffin Memorial Hospital Annex (for ambulatory neuropsychiatric patients located ten miles east of Lexington), or Purcell (county seat of McClain County). Lexington also enjoys income from rich, river-bottom farming operations and the Alamo Oil Field located seven and one-half miles northeast of the town.[46]

Noble is located six miles southeast of Norman. The population is 2,500; its economy is primarily supported by farming. The economy is also supported by commuters to

the University of Oklahoma, Tinker Air Force Base, and Central State Griffin Memorial Hospital.[47]

During the first three months of 1963, a multiphasic screening program, including glaucoma testing, was done in Cleveland County. The statistical results of this screening program are found in table 1.

Screening tests are for apparently healthy persons; those with known diseases are not screened. Screening is not diagnostic, but points to the people who should consult their own physician for further medical workup. Results of the selected abnormal screening findings are reported only to the physician, not the screenee himself. Through screening, those people most likely to need medical attention are referred to their doctor. Thus, the physician's time can be better utilized for early diagnosis and treatment.

Table 1
Referrals From Multiphasic Screening, Including Glaucoma

January 1, 1963, to August 21, 1963

Abnormalities	Number of Persons Screened	Number Referred for Abnormalities
I. Overweight	3,271	168
II. Cervical Cytology	1,296	
A. Class 1		56
B. Class 2 and 3		26
C. Class 4		4
III. X-ray	2,240	
A. Abnormal Cardiac Shadow		76
B. Other Abnormal Mediastinal or Pulmonary Shadow		43
IV. Diabetes	2,043	27
V. TB	1,183	115
VI. Abnormal ECG	766	27
VII. Abnormal HGB	2,968	121
VIII. Abnormal HBP	2,121	91
IX. Glaucoma	670	42
Total	3,941[a]	604

[a]Out of a total of 3,941 screenees, 3,020 had no abnormalities in any area for which they were screened. Screenees having known abnormalities falling within the areas listed above were not screened for those specific abnormalities, but were screened for others.

SPECIFIC CONSIDERATIONS: ADMINISTRATIVE METHODOLOGY

Phase One: Fact-finding, Needs, and Resources—Cleveland County has 74 medical physicians.[48] A distribution of physicians on the basis of their availability to the population is found in table 2:

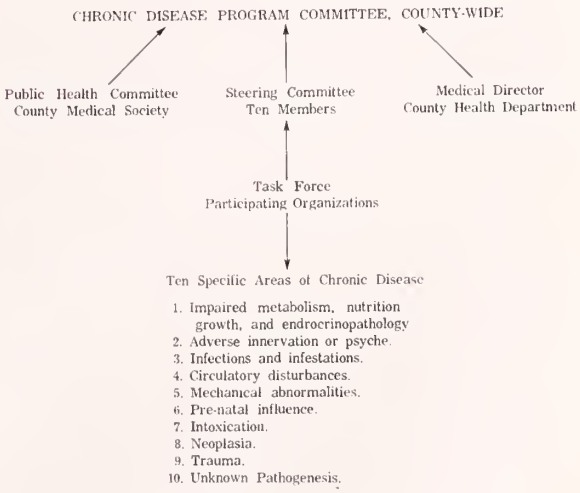
Table 2
Distribution of Physicians on the Basis of Their Availability to the Population

Population Group	Number of Persons	Number of Physicians
University	17,172	8
Central State Hospital	1,855	28
Cleveland County Residents	53,524	36
Retired Physicians		2

There are 127 active organizations with committees which work either partially or entirely in some area of health. Besides the neuropsychiatric hospitals, Cleveland County has one non-surgical hospital and an expanding Municipal Hospital.[49]

With this background information, a team concept needs to be developed to give impetus to a chronic disease program.[50] The team should be under the program direction of the medical director of the local health department. It would be evolved to provoke and solicit active participation of an ever-increasing number of citizens.[51] Each of the 127 organizations alluded to above would be contacted by the medical director of the health department. He would encourage each organization to designate a committee or individual to work as a task force to study needs and resources in relation to ten specific areas of chronic disease. A steering committee would be formed with a representative from each task force to coordinate, in conjunction with the medical director, all areas of chronic disease programming in the county. The medical director of the health department would be an ex officio member

Table 3



of the steering committee. The public health committee of the local medical society, the steering committee of the various organizations, and the medical director of the local health department would form the Chronic Disease Program Committee for the county (see table 3).

During the time that the study of the county needs and resources is being made, a well-planned program of public information and education should be effected.

Phase Two: *Planning* — In cooperation with the County Medical Society, the Chronic Disease Program Committee will carefully evaluate the reports from the Organizational Committees, Task Force Committees, and Steering Committee and will make specific recommendations concerning the depth and scope of specific chronic disease program areas to be developed.[52]

The facets of this program must be concerned with the socio-economic and geographic factors in Cleveland County, as well as areas of activity in relation to the detection of needs of the chronically ill; the detection of needs is relative to both *site* and *time*. *Site* of detection includes the physician's office, the hospital, the multi-physician clinic, as well as screening centers, rehabilitation centers, nursing homes, adult boarding homes, day care centers for children, foster homes, convalescent homes, penal institutions, rooming houses, and private homes. Time of detection involves and is relative to the pathogenesis of a disease from the well person to the fulminating chronic disease, *i.e.*, maintaining well-patient care, screening for early cases of chronic disease, instituting abortive therapy in chronic disease cases, and instituting restorative or palliative services in cases of chronic disease.[53]

Phase Three: *Operational*—The operational phase will be to put into effect the program outlined in the reports resulting from procedures consummated in Phase Two. It is important that the certain key "musts" to a chronic disease program are not overlooked. Do not fail to:

I. Solicit all segments of the county.
II. Have concomitant publicity regarding the program.
III. Establish program priorities as such needs are delineated.
IV. Incorporate the chronic disease program into a much broader public health program.
V. Include representatives from any organization, business, industry, governmental, and political group not mentioned above.
VI. Involve all personnel from the county health unit in the program.
VII. Continually evaluate chronic disease needs in the following locations:
    A. Institutional locations.
        1. Hospitals.
        2. Convalescent homes.
        3. Nursing homes.
        4. Boarding homes.
        5. Foster homes.
        6. Homes for the aged.
        7. Almshouses, jails, and other public institutions.
    B. Non-institutional locations.
        1. Physician's offices.
        2. Clinics.
        3. Private homes.[54]

SUMMARY

A Chronic Disease Program for Cleveland County, Oklahoma, should have as its express purpose the prevention of disease through the utilization of all existing and potential resources. These resources should be concerned not only with evaluating the problems but also satisfying the needs related to chronic disease within the framework of the aforementioned definition; a chronic disease is "a disease that may be expected to require an extended period of medical supervision and/or hospital, institutional, or supervisory care."[1]

By exerting direction for interdisciplinary cooperation, Preventive Medicine and Public Health can be the means to a more abundant subsistence for the chronically ill. The degree of success realized from such a program is directly proportional to the extent of alliance inspired by adept leadership. It is imperative that Preventive Medicine and Public Health demonstrate a capacity for responsible leadership and steadfastness to purpose. □

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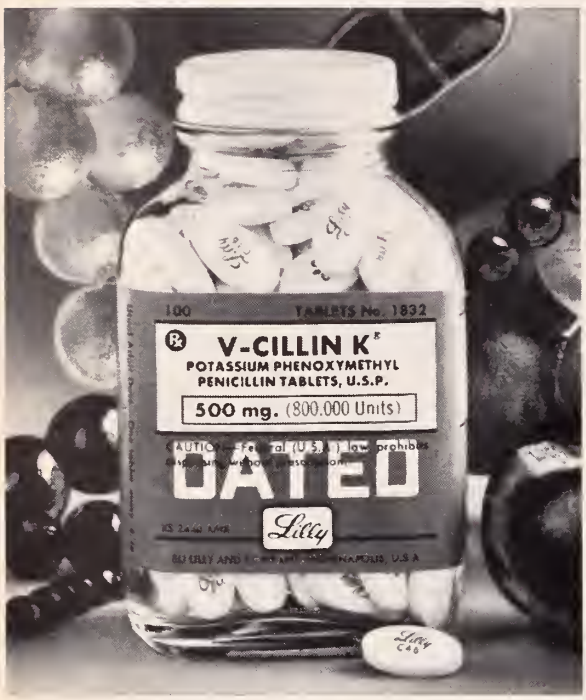
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Contraindication: Penicillin hypersensitivity.

Warnings: In rare instances, penicillin may cause acute anaphylaxis which may prove fatal unless promptly controlled. This type of reaction appears more frequently in patients with a history of sensitivity reactions to penicillin or with bronchial asthma or other allergies. Resuscitative drugs should be readily available. These include epinephrine and pressor drugs (as well as oxygen for inhalation) for immediate allergic manifestations and antihistamines and corticosteroids for delayed effects.

Precautions: Use cautiously, if at all, in a patient with a strongly positive history of allergy.

In prolonged therapy with penicillin, and particularly with high parenteral dosage schedules, frequent evaluation of the renal and hematopoietic systems is recommended.

In suspected stophylococcus infections, proper laboratory studies (including sensitivity tests) should be performed.

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Penicillin is a substance of low toxicity, but it possesses a significant index of sensitization. The following hypersensitivity reactions have been reported: skin rashes ranging from maculopapular eruptions to exfoliative dermatitis; urticaria; and reactions resembling serum sickness, including chills, fever, edema, arthralgia, and prostration. Severe and often fatal anaphylaxis has occurred (see Warnings). Hemolytic anemia, leukopenia, thrombocytopenia, and nephropathy are rarely observed side-effects and are usually associated with high parenteral dosage.

Administration and Dosage: Usual dosage range, 125 mg. (200,000 units) three times a day to 500 mg. (800,000 units) every four hours. For infants, 50 mg. per Kg. per day divided into three doses.

See package literature for detailed dosage instructions for prophylaxis of streptococcus infections, surgery, gonorrhea, and severe infections.

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V-Cillin K, Pediatric, for Oral Solution, 125 mg. (200,000 units) and 250 mg. (400,000 units) per 5 cc. of solution (approximately one teaspoonful). [042567]

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ABSTRACTS

HYPOGLYCEMIA

These authors have previously reported on the acute effects of ethanol on hepatic glucose output and peripheral glucose utilization in fasted dogs and have shown that ethanol produces hypoglycemia by decreasing the hepatic glucose output. It has been postulated that the increased $NADH_2$/NAD ratio generated in the liver during ethanol metabolism causes the suppression of hepatic gluconeogenesis.

As a result of their studies on fasted dogs, the authors showed the following: 1. infusion of ethanol produced a prompt decrease in hepatic glucose output (58 per cent fall). 2. the infusion of fructose during ethanol suppression resulted in a significant increase in hepatic glucose output (170 per cent increase) (fructose chosen because it is a non-NAD-dependent precursor of glucose). 3. the infusion of a-ketoglutarate or glutamate (NAD dependent precursors of glucose) did not increase the output of liver glucose. 4. the infusion of methylene blue restored hepatic glucose output to control values. Methylene blue can oxidize $NADH_2$ to NAD. They concluded that these studies supported the postulate that the increased $NADH_2$/NAD ratio suppresses the gluconeogenic pathway at several points. The elaborate biochemical discussion is facilitated by frequent referrals to a complex drawing showing the multiple pathways involved.

Reviewer's Note: This is a well written article full of much information. Several readings will be necessary before the significance of the work can be fully appreciated.

Ethanol-Induced Hypoglycemia 11. Mechanism of Suppression of hepatic gluconeogenesis. L. L. Madison, A. Lochner, and J. Wulff. J. Amer. Diabetes Assoc. **16**(4): 252-258, 1967.

THE BORROWED OSSICLE

In 1960 Swedish otologic surgeons suggested repositioning of the incus (autograft) in order to reconstruct the ossicular chain during tympanoplasty. The use of metal or plastic prostheses for the malleus, incus, or stapes has been discouraging because of extrusion of the prosthesis, erosion of the overlying epithelium, or being inert, the prosthesis failed to maintain pressure on the stapes or stapedial footplate. The authors describe their experiences using fresh cadaver bone (the borrowed ossicle). This substitution is readily made since the ossicles are almost the same size in every individual. The advantage of a living prosthesis is that the incus fragment "grows" to the malleus, capitulum of the stapes, or denuded stapedial footplate and maintains a secure conducting mechanism. To do this it is important that the ossicle contacts a viable portion.

The author's report covers his first experience with 96 operated cases using the autograft incus and repositioning of this ossicle. In 43 of these postoperative air conduction was within 15 db of the preoperative bone conduction. Then he proceeded to the use of a homograft incus where the patient's own incus had been destroyed by disease or removed (cholesteatoma) at radical mastoidectomy—ten cases. Where the malleus and stapes remained, the homograft incus was used as the autograft had been. In other cases where all ossicular tissue except the stapedial footplate had been removed, the short process of the incus homograft was placed on the stapedial footplate and covered with a graft. The homograft was shown to function in the same way as the autograft.

Eighty per cent of the cases closed the air-bone gap to within 15 db of the preoperative bone conduction; in 60 per cent a hearing level of 30 db or less was obtained. In no instance was the postoperative air or bone conduction worse than the preoperative level.

Reviewer's note: This is a well written, carefully reported study. Beautiful color photographs of the incus' positioning are shown.

The Borrowed Ossicle in Tympanoplasty. Roger E. Wehrs, M.D. Arch. Otolaryng., **85**: 45-54, 1967.

RECENT PUBLICATIONS

The *Journal* welcomes the opportunity to list current publications by any Oklahoma physician.

Tonal patterns of cochlear impairment following intense stimulation with pure tones. F. Suga, J. B. Snow, W. J. Preston and J. L. Glomset. Laryngoscope, **77**: 784, 1967.

Sudden and unexpected death from natural causes in young adults. J. L. Luke and M. Helpern. A.M.A. Archives of Pathology. In press.

Effect of various nutrients on urinary divalent cation excretion. R. D. Lindeman, S. Adler, M. J. Yiengst, and E. S. Beard. J. Lab. and Clin. Med., **70**: 236-245, 1967.

Cerebral atrophy: A cause of vertigo. E. A. Walker. Laryngoscope, **77**: 771-783, 1967.

Cholesterol levels during sleep and dreams. J. L. Mathis, C. M. Pierce, and B. K. Lester. Amer. J. Psychiat., **124**: 3, 1967. □

OSMA JOURNAL / heart page

Diagnosis: Learner's Fatigue Rx: Capsules for Knowledge

JOHN M. KALBFLEISCH, M.D.*

TRADITIONAL concepts of education are undergoing major revisions currently as the need to enhance one's continuing education becomes more acute in the face of a vast knowledge explosion. The busy physician is a prime example of one who needs to maintain modern standards of practice in a rapidly evolving field. How this can be accomplished best is a subject worthy of considerable debate.

Little is known regarding the biochemistry of learning and still less is known about the memory process. It seems reasonably certain that the future will bring science-fiction methods into reality so that both learning and memory can be enhanced greatly by simple measures such as taking a capsule. However, this generation has to solve the problem by other means.

Learning is personal and it must have meaning as well as realistic goals.[1] It should be accompanied by some type of feedback mechanism to let the student know what he has learned and what more he needs to know. Obviously the rapidity of learning is directly related to the level of motivation.

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Different approaches to continuing education have been tried across the country. Only a highly motivated person can learn by attending some of the many medical meetings and listening to lectures passively. The knowledge gained from such experience is short-lived.[2] Likewise, the retention of auscultation skill obtained during an intensive short course consisting of 12 to 20 hours of instruction was less than six months in duration.[3]

What then constitutes the optimal method of learning for the practitioner? Ideal learning conditions are present when a critical event occurs during the course of patient care which is stressful to the physician. Proper solutions or mistakes in judgment derived from such circumstances are retained longer. Unfortunately, too often a good teacher or consultant is not readily available at such times and a meaningful learning opportunity is lost. In general most of our knowledge is not obtained under such crisis conditions.

Most postgraduate courses still adhere to the canned lecture style. While such a gathering may serve a useful purpose in getting the physician out of his office and letting him see a few old colleagues, it does little to enhance his fund of information.

Learning involves a considerable effort on the part of the student. Some postgraduate courses have recognized this basic precept and are developing methods to get those attending courses involved by participation and to let them know what they are accomplishing. Although the critical incident cannot be transferred to the classroom, a reasonable substitute can be achieved by involving the student in patient management and diagnostic problems.

An illustration of a course emphasizing these features is one held annually by the University of Oklahoma Medical Center Departments of Postgraduate Education and Continuing Education in Basic Clinical Cardiology. The course is held the first week in February and is purposely restricted in enrollment to 20 physicians. Each participant is furnished a laboratory manual oriented toward patient problem solving. Auscultation is taught by using different patients every day and to a lesser extent by didactic and laboratory sessions. Feedback is constantly provided during workshop sessions by the cardiology faculty. The atmosphere is relaxed and informal. The participants are often called on to present their solution to a problem case. Also a test is given to measure improvement and a participant may wish to compare himself with his colleagues. The results of before and after course test scores from a recent year are given in table 1A. These results indicate that a significant improvement in test scores occurred after the course up to a level nearly equivalent to the average resident physician, as shown in table 1B. Retention of acquired knowledge is currently being tested but it depends to a large extent upon reinforcement by repetition. Hopefully the results of retesting will be superior to the previously described intensive short course. All the participants have enthusiastically endorsed this program as a pleasant learning experience.

Table 1-A

Group	Number Tested	Mean Precourse Score	Mean Postcourse Score	Mean Change
Postgraduate Course Participants	9	—12	19	+31

Table 1-B

Group	Number Tested	Mean Score
Third Year Medical Students	18	0
Interns	6	11
Medical Residents	13	26

Other specialty groups also have formulated practical work courses. The Department of Anesthesiology at the University of Oklahoma Medical Center recently conducted a week-long course in anesthesia for the general practitioner. It was organized with each physician working alongside an anesthesiologist as preceptor. The response by the participants was enthusiastic.

Another problem area, self assessment, is being approached by the American College of Physicians. The aim of their program is to enable each physician voluntarily to define areas of medical knowledge in which he is particularly weak. Such areas then can form the content of his own educational efforts in whatever fashion he chooses. The program is commendable and deserves support and encouragement. Other specialty groups will launch similar programs.

What the future holds in the realm of education is as hazy as the innovations which will occur in medicine. Like other areas of change, they promise to be stimulating and exciting.

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Books As Clinical Tools

DEVELOPMENTAL DIAGNOSIS

LOGAN WRIGHT, Ph.D.*

Development and its evaluation is an intricate pattern of genetic, nutritional, social and cultural forces dynamically affecting the child from conception to adulthood. Furthermore, developmental processes influence virtually every disease process occurring in the infant, child and adolescent. Workers in medicine, psychology and other disciplines have made important contributions to the present knowledge of an approach to developmental diagnosis.

The purpose of this paper is to acquaint physicians with some of the more basic and useful sources of information in developmental evaluation and diagnosis. In addition these sources may be used to understand and utilize the services of specialized consultants and referral sources more effectively.

The bibliographical sources here can be categorized into three different areas: (1) developmental pediatrics, (2) pediatric neurology, and (3) pediatric psychology.

For a comprehensive and inclusive reference on growth and development *Growth and Development of Children* by Watson and Lowrey is excellent. It covers physical and physiologic as well as behavioral growth and development in detail. *Babies Are Human Beings* by Aldrich and Aldrich remains an excellent, practical general reference on all aspects of growth and development. *The Development of the Infant and Young Child —Normal and Abnormal* by Illingsworth also is useful. This work summarizes and reports a voluminous amount of work by other behavioral and medical researchers. Chapter 10 (The Examination of the Child) is particularly useful. However, the first eight chapters, which structure and conceptualize the various areas of development in a manner similar to Gesell's make enticing reading.

Cerebral Function in Infancy and Childhood by Peiper is recommended in the area of pediatric neurology. Peiper is professor emeritus and formerly chief of pediatrics at Leipzig University. This is a comprehensive volume of 683 pages. Chapters four (Reflexes of Position and Movement), seven (Reflexes of Clinical Significance) and the chapter (Neurological Characteristics of Certain Developmental Phases) are vital, comprehensive and well written.

In the area of pediatric psychology, four specific instruments for developmental evaluation will be recommended, each for a specific but different purpose. The *Gesell Developmental Schedules* is suggested in that it undoubtedly represents the most widely used technique among physicians. Consequently, there are many clinical skills associated with this instrument which can be passed on from mentor to medical student or even from colleague to colleague. Secondly, there is the *Cattell Scale,* the Gesell counterpart in the field of psychology. Among psychologists it is the most widely used clinical instrument. The *Cattell Scale* is appropriate for assessing development for the first two years of life. At age two, it blends easily into the *Binet test,* since the Cattell was originally constructed as a downward extension of the *Binet.* In addition to these widely used infant scales, two additional instruments deserve recognition because of other merits. One of these is Bayler's *Revised California First Year Scale.* In terms of its standardization and norms, this instrument must be regarded as the most psychometrically refined of all available infant tests. It should be noted also that the scale is only applicable for children between one and 15 months old. Finally, a new scale developed by *Hunt and Uzgiris* must be mentioned. This scale is still very much in the experimental and developmental stage. However, early experience with it as well as the theory on which it is constructed indicate that it has great promise. The Hunt and

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One of a series sponsored by the Department of Continuing Education, University of Oklahoma Medical Center.

Uzgiris scale represents the first English language attempt to translate the developmental theories of Jean Piaget, which have proven of great descriptive and explanatory significance, into a diagnostic device. The most encouraging aspect of the Hunt and Uzgiris test is that it appears to be a truly ordinal scale. That is, the performance of children is free of "scatter" where children sometimes fail items at a younger age level only to pass items at a higher age level. Inevitably, children tested on the Hunt and Uzgiris scale have succeeded up to a point where failures begin and continue. The implication of this finding is that Piaget's theory is accurately descriptive of the various progressions along which development occurs. Also, the Hunt and Uzgiris test apparently gives a valid assessment of developmental sequence according to Piaget's theory.

For one wishing an overview on the psychological evaluation of infants, a Society for Research in Child Development monograph entitled *Infant and Preschool Mental Tests: Review and Evaluation*, by Stott and Ball is recommended. This monograph reviews over a dozen developmental tests and considers all of the conceptual and methodological problems connected with developmental evaluation. □

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OSMA JOURNAL/news

Capitol Meeting Slated For Doctors' Wives

A meeting to familiarize doctors' wives with the "legislative process" is being planned by the Auxiliary of the OSMA. The meeting is to be held January 9th at the State Capitol Building in Oklahoma City and will include a visit to the State Senate and the House of Representatives while they are in session and a view of a legislative committee at work deliberating on bills.

Registration for the all-day event will take place from 9:00-10:00 a.m. in the Sequoyah Memorial Building Auditorium. The auditorium is located in the underground tunnel midway between the Sequoyah and Will Rogers Office buildings, both of which are located directly across the street north of the State Capitol Building.

At 10:30 in the morning the physicians' wives will meet in the gallery of the State Senate and will observe the State Senate in session for approximately 20 minutes.

A time has been set aside in the morning for each lady in attendance to call on her state Senator and on her elected members serving in the House of Representatives.

The afternoon portion of the meeting will start with a message of welcome from either the Governor or Lieutenant Governor of the State of Oklahoma and short talks by the Honorable Clem McSpadden, President Pro Tempore of the Oklahoma State Senate, the Honorable Rex Privett, Speaker of the House of Representatives and Maxwell A. Johnson, M.D., President of the Oklahoma State Medical Association.

At 1:30 in the afternoon the group will gather in the gallery of the Oklahoma House of Representatives to observe operation of the 99 member House.

At midafternoon all participants will attend a meeting of the Oklahoma State Senate's Committee on Education. Here they will have the opportunity to watch a committee at work deliberating on bills connected with the state's educational needs.

The meeting will give physicians' wives an opportunity to familiarize themselves with the operation of the Oklahoma State Legislature, and to observe first hand the legislature in operation. □

OSMA To Sponsor "Doctor of the Day" During Legislature

The "Doctor of the Day" program for the Oklahoma State Legislature will be sponsored again this year by the OSMA. This will mark the third year this project has been undertaken by the association.

The project provides a licensed medical doctor to be on call in the State Capitol Building during the time the House of Representatives and the State Senate are in session. The doctor is provided with a fully equipped first aid station located between the chambers of the two legislative bodies. A registered nurse, provided by the Oklahoma State Nurses Association, will be assigned to the station each day to assist the doctor.

Doctor C. Riley Strong, OSMA Coordinator for the project, has requested that any physician interested in participating in the program contact Mr. Dwight Whelan, Associate Executive Secretary of the OSMA.

After the last legislative session, the state medical association received several compliments for providing this service to the Senators and Representatives. Doctor Strong said, "The 'Doctor of the Day' program is a valuable adjunct to our association's public relations effort."

Each physician serving as Doctor of the Day is introduced on the floor of the House and Senate and is one of the few people allowed on the chamber floor while the legislative bodies are in session. □

Nurses-Physicians To Confer on Mutual Problems

The OSMA and the Oklahoma State Nurses Association are cooperating to sponsor a statewide conference on the subject "Nurse-Physician Collaboration Toward Improved Patient Care." The conference will be held February 15th-17th at Fountainhead Lodge on Lake Eufaula.

The conference, to be attended by 50 physicians and 50 nurses, is designed primarily to create better intercommunications between the two professions. During the three-day meeting mutual problems of the two groups will be analyzed by experts and discussed in group sessions.

In a letter inviting the OSMA representatives to attend the meeting Doctor Maxwell A. Johnson, OSMA President, said, "It should be pointed out that the importance of this conference is not so much the planned program as it is the opportunity for nurses and physicians to hold open and frank discussions about their mutual problems and about problems of one profession that affect the efficiency of the other."

The meeting is being planned by the OSMA Committee on Nursing, chaired by Doctor Joe L. Duer of Woodward, working in cooperation with the Oklahoma State Nurses Association.

According to Doctor Duer the most interesting and possibly most important speaker at the meeting will be a "patient." The patient is Mrs. Irene Bowman of Woodward. Mrs. Bowman is a nationally known world traveler and a past-speaker on the Knife and Fork circuit. She is a witty and entertaining speaker who has been a "patient" in hospitals around the world.

Topics of discussion at the three-day meeting will include future action to improve the nursing standards, how to increase the number of nurses and how to help establish goals for future nursing education in the state.

The meeting will be held in the ultra-modern Fountainhead State Lodge on Lake Eufaula. □

DPW Cutting Payments For Injectibles

The Oklahoma Department of Public Welfare has announced effective December 16th its Title XIX funds will no longer pay physicians for injectible drugs. Lack of funds was cited as the reason for the move.

In a letter to Oklahoma doctors, L. E. Rader, Director of Public Welfare for Oklahoma, said, "it is now mandatory that a reduction in the expenditures for medical services be placed into effect, to bring the expenditures within the funds available." He said the OSMA had recommended a reduction in the scope of services in the event it was necessary to curtail the Title XIX program.

Maxwell A. Johnson, M.D., OSMA President, explained that the state association had urged the reduction in services in order to avoid setting a precedent for the DPW paying less than the doctors' reasonable, customary and prevailing fees.

The need for the reduction was brought about when the DPW expenditures for medical services exceeded the revenue from sales tax money available to earn federal matching funds. Between July 1st and November 1st of this year the DPW Title XIX funds had paid out nearly 21 million dollars.

After making distribution of funds in November to its various programs, the department found that it had only $603,000 left in reserve. If, for some reason, there was a decrease in the collection of sales tax or a sudden increase in expenditures, the department would be unable to meet its commitments. The reduction in scope of medical services was necessary to lessen this possibility.

The OSMA recommended that injectibles be removed from the scope of services when it was discovered that they accounted for nine per cent of the total physician bills submitted for Title XIX payment.

Bertha Levy, M.D., DPW Administrative Assistant, pointed out that this was the only reduction being made in the scope of "physicians services," but that savings were being made in other areas. Hospital inpatient payments were being reduced by cutting a spell of illness from 90 days to 30 days with a limit of one 14-day extension and that organized outpatient clinics would now be paid only for care to public assistance recipients.

Payments to nursing homes will be cut by strictly enforcing the regulations for patient admission, by re-evaluating patients every six months and by making no retroactive payments for patient care.

Doctor Levy urged all physicians to exercise restraint in the treatment of public assistance recipients by doing only what is necessary and to treat them as any private patient who pays his own bills. She explained, "this will give everyone a chance to receive as broad a scope of medical care as possible under the program." □

OMPAC Gaining in Membership and Support

The Oklahoma State Medical Political Action Committee's membership is rapidly approaching the 800 mark according to Rex Kenyon, M.D., state OMPAC Chairman. The increased membership has resulted in a substantial political campaign fund for the upcoming elections.

"Since there were no elections in 1967," Doctor Kenyon said, "we were able to retain all of the membership funds taken in during this year. When the 1968 memberships begin to come in, after the first of the year, we should be able to double our campaign fund. This will give OMPAC several thousand dollars to use for candidate support."

In addition to the OMPAC support some state candidates will also receive support from the American Medical Political Action Committee, known as AMPAC. The combined support of the two organizations will give some candidates substantial campaign contributions from the medical profession.

The new unified billing procedure being used by the OSMA will give every Oklahoma physician an opportunity to join OMPAC. (This new procedure is reported in another article in this issue of *The Journal.*) The House of Delegates authorized the Executive Office to include a blank on the new billing statement to give each member an opportunity to voluntarily join OMPAC.

In a recent letter to all OMPAC members, Chairman Kenyon pointed out that all OMPAC membership contributions are used for candidate support and that there are no administrative or promotional expenses paid from these funds.

In order to assure that OMPAC funds will be used to support candidates preferred by the medical profession a questionnaire has been sent to all OMPAC members seeking their "advice and counsel."

The questionnaire asks for the names of candidates that OMPAC should support. It also seeks information as to whether or not the OMPAC member would be interested in "actively" campaigning for a candidate.

In the letter Chairman Kenyon said, "It goes without saying that we cannot be effective by simply giving dollars! We must offer, within the limits of our time and ability, direct campaign support." He went on to urge every OMPAC member to recruit one new member for the organization.

In closing he said, "I need not remind you that Medicare would not have passed this present 90th Congress; because of conservative gains made in the 1966 elections! We were only two years too late. Won't you give a few dollars and a few hours toward the goal of improving things . . . even more?"

Following Doctor Kenyon's report on the current status of OMPAC to the OSMA Board of Trustees during its meeting Saturday, December 9th, 14 doctors pledged to become sustaining members of the committee. Such a membership costs $198. Doctor Kenyon said, "This type of membership will add significantly to our campaign fund during this election year. We urge all physicians to join OMPAC on this basis. With this money and support, our presence will be felt during the upcoming elections." □

Specialty Sections Set For Annual Meeting

Most of the specialty section programs for the OSMA Annual Meeting are now ready according to Richard B. Price, M.D., Annual Meeting Committee Chairman. The three-day annual meeting, May 16th-17th-18th in Oklahoma City, will have eleven scientific sessions planned by various specialty groups.

The scientific sessions will include programs on cardiovascular disease, eye, ear, nose and throat, general practice, internal medicine, obstetrics and gynecology, orthopedics, pediatrics, psychiatry, radiology, surgery, and urology. In commenting on the scientific sessions, Doctor Price said, "We have had excellent cooperation from all of the specialty societies in preparing the scientific portion of the program."

The doctor continued, "Judging from the completed scientific program I have seen thus far, this meeting should be one of the most informative we have ever held."

Program Examples

The section on psychiatry will be held Friday morning, May 17th on the theme "Psychoactive Drugs in Medicine." The program will include four papers: "Clinical Use of Phenothiazines" by K. D. Charalampous, M.D., associate professor of psychiatry at the Oklahoma University Medical Center; "Drugs and Sleep" by Boyd K. Lester, M.D., associate professor of psychiatry at the OU Medical Center; "The Subcultures of Hallucinogen Users" by L. J. West, M.D., professor and head of the department of psychiatry, neurology and behavioral sciences, Oklahoma University Medical Center. The out-of-state speaker will be Doctor Arnold Mandell, M.D., associate professor of psychiatry, UCLA, Los Angeles. His subject will be "The Psychopharmacology of Everyday Life."



ARNOLD MANDELL, M.D.



GILBERT H. FLETCHER, M.D.

The out-of-state speaker for the scientific section on radiology will be Gilbert H. Fletcher, M.D. He is the chairman of the Department of Radiotherapy and professor of radiotherapy for the University of Texas, M. D. Anderson Hospital and the Tumor Institute in Houston. He also serves as a consultant in radiotherapy and radiology for St. Joseph's Hospital, Hermann Hospital, Texas Children's Hospital, St. Luke's Hospital and the Lackland Air Force Base Hospital in Houston.

The scientific section on obstetrics and gynecology will use the theme "Second Thoughts on Conception Control Measures." Donald A. Goss, M.D., professor and chairman of the Department of Obstetrics and Gynecology for Vanderbilt University School of Medicine, will speak on the topic "The Pill." Herbert W. Birch, M.D., assistant professor of the Department of Obstetrics and Gynecology for Emory University School of Medicine in Atlanta, Georgia, will discuss the topic "VI.U.D." "Medical Considerations" will be the topic discussed by Robert Furman, M.D., professor of research medicine for the University of Oklahoma School of Medicine.

Doctor Peter J. Talso, M.D., professor and chairman of the Department of Medicine of Loyola University, Stritch School of Medicine, will be the out-of-state speaker for the internal medicine scientific section meeting. The doctor will speak on the subject "Remediable Hypertension." The section on eye, ear, nose and throat will meet the morning of Friday, May 17th, to hear three papers. David Paton, M.D., associate professor of ophthalmology for the Wilmer Institute, Johns Hopkins Hospital, Baltimore, Maryland, will speak on the subject "Recent Advances in Corneal Surgery." Doctor Roger E. Wehrs, M.D., Tulsa will present two papers, "The Medical and Surgical Treatment of Serous Otitis Media" and "Experiences with Homograft Ossicles."

Doctors C. Howard Ross and Irving V. Perlstein will present two papers each to the general practice scientific section at the annual meeting.



DAVID PATON, M.D.



IRVING V. PERLSTEIN, M.D.

Doctor Ross will speak on "Is Geriatrics Pounding at Your Door?" and "Granny's Herbs and the Witch Doctor." Doctor Perlstein, an instructor in medicine for the University of Louisville School of Medicine, will present "What's Your Question About Obesity?" and "The Long Term Management of Obesity, a Chronic Disease."

Other scientific section programs will be presented in future issues of *The Journal.*

The planning for the social functions and business meetings to be held at the annual meeting is now complete. The social functions will include a champagne party Thursday evening, a Gaslight Party Friday evening, and the annual President's Dinner-Dance Saturday evening. All social functions will be held in the Skirvin Hotel.

The business portion of the annual meeting will include a meeting of the OSMA Board of Trustees Thursday afternoon, May 16th, and a meeting of the full OSMA House of Delegates, Friday and Saturday mornings, May 17th and May 18th. During the two-day session, the House of Delegates will elect new officers and will hear and consider recommendations by the various OSMA Councils.

A special half-day forum on medicine and government will be held during the annual meeting on Saturday, May 18th. The forum is designed to familiarize physicians with the operation of state government and the legislature in particular. High ranking members of the House and Senate and of both political parties will be present to discuss the various aspects of government and politics. A portion of the program will be used to explain why and how the OSMA must involve itself with legislation in the state legislature.

Eighty-five commercial, institutional and scientific exhibits will be displayed in the Skirvin Hotel's Convention Center during the annual meeting. The commercial exhibits will include booths for pharmaceutical companies, surgical supply houses, and products and other services of interest to physicians.

Ten booth spaces have been set aside for the scientific exhibits and some of them have not been taken. They will be reserved on a first come first served basis for any physician or group of physicians who wish to prepare a scientific exhibit for display at the meeting. Anyone interested in such a display should contact Mr. Dwight Whelan, Associate Executive Secretary, OSMA, P.O. Box 18696, Oklahoma City, Oklahoma 73118. □

Doctor Blue To Head National Organization



JOHNNY A. BLUE, M.D.

Johnny A. Blue, M.D., Oklahoma City, has been chosen President-elect of the American Association for Clinical Immunology and Allergy. Doctor Blue will take office as President in 1969. He is currently the associate clinical professor of medicine at the University of Oklahoma Medical Center. □



Pauls Valley Physician Honored

Hugh H. Monroe, M.D., Pauls Valley physician, received a Life Membership in the Oklahoma State Medical Association at a recent meeting of the Garvin County Medical Society. OSMA Alternate Trustee, Frank W. Clark, M.D., (left) Ardmore, is shown making the presentation. Mrs. Monroe is shown with Docton Monroe. □



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President Rouse To Attend Oklahoma Meeting



MILFORD O. ROUSE, M.D.

Milford O. Rouse, M.D., President of the American Medical Association, will be in Oklahoma Friday, January 19th and Saturday, January 20th, to address a special postgraduate course for physicians to be held at the Oklahoma Center for Continuing Education in Norman.

The one and one-half day regional conference is designed for physicians from Oklahoma and surrounding states to discuss the theme "The Physician and the Elderly Patient." The program is being sponsored by the Southwest Center for Gerontological Studies and the Office of Postgraduate Education of the OU Medical Center.

The faculty for the conference will focus on the clinical features and the total management of the geriatric patient with organic and psychiatric conditions. The latest findings in the field of geriatrics from the disciplines of internal medicine, psychiatry, psychology and medical sociology will be presented. It will acquaint the doctors with the community resources, procedures and facilities available for their own practice.

Tuition for the meeting is $35.00 and attendance is limited to 150 physicians and is by preregistration only. Physicians wishing to attend the meeting should pre-register no later than January 2nd.

Doctor Rouse will speak twice during the meeting. He is slated to address a dinner at the Norman Holiday Inn, Friday evening at 7 p.m. He will also address the conference Saturday morning at 9 a.m. in the Continuing Education Center on the subject "Society and Aging."

Physicians interested in attending the meeting should contact Inci I. Terry, Ph.D., Director, Southwest Center for Gerontological Studies, University of Oklahoma, 1700 Asp, Norman, Oklahoma 73069. □

Physicians and Clergyman To Discuss Total Patient Care

"The Whole Man in the World of Changing Morals" will be the topic of a statewide conference on Medicine and Religion being planned by the OSMA Medicine and Religion Committee in cooperation with the Oklahoma Council of Churches. The two-day meeting will be held February 2nd and 3rd in the St. Francis Center for Christian Renewal in Oklahoma City.

Doctor Edward K. Norfleet, Chairman of the OSMA committee said the meeting is designed to bring doctors and clergymen together to discuss the relationship of a patient's physical well-being to his spiritual well-being.

Two nationally known speakers will address the meeting participants. Doctor David Belgum, Ph.D., of the University of Iowa School of Religion and College of Medicine and the Reverend Doctor Paul B. McCleave, Director of the Department of Medicine and Religion for the American Medical Association, will provide keynote addresses.

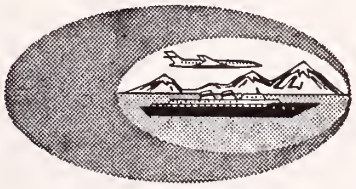
Doctor Belgum is an ordained minister of the Lutheran Church in America and a member of the American Psychological Association. He received his Ph.D. from Boston University in the psychology of religion and has written several books and many articles. His latest book, "Religion and Medicine," was published in 1967.

The Reverend Doctor Paul B. McCleave is best known for his work with the AMA Medicine and Religion program. A Presbyterian minister, he served as a chaplain in the United States Navy during World War II and spent 27 months in the South Pacific. After the war he served as President of the College of Emporia, Emporia, Kansas, for five years. In 1961 he was named as Director of the Department of Medicine and Religion for the AMA. Doctor McCleave is well known to most Oklahoma physicians and holds an honorary doctorate of law degree from the University of Tulsa.

The program will consist of talks by the two primary speakers followed by discussions and reactions to the talks by two physicians and two clergymen. The topics will cover a wide range of subjects including unwed mothers, abortion, alcoholism, the pill, and the physician-clergymen partnership in health care.

All OSMA members are invited to attend this meeting and a special descriptive brochure will be distributed in the near future. □

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DEATHS

LAILE G. NEAL, M.D.
1898-1967

A long-time Ponca City physician, Laile G. Neal., M.D., died November 27th, 1967. Born in Enid August 6th, 1898, he graduated from the University of Oklahoma School of Medicine in 1925. The following year he established his practice in Ponca City. During World War II, he served for three years with the Armed Forces. He was active in both medical and civic affairs in his community.

ROBERT M. STOVER, M.D.
1926-1967

A 41-year-old physician, Robert M. Stover, M.D., died in Claremore, November 19th.

A native of Miami, Oklahoma, Doctor Stover graduated from the University of Oklahoma School of Medicine in 1953. Following a residency in surgery at Hillcrest Hospital in Tulsa, he established his practice in Claremore.

He was a member of the executive board of the Oklahoma State Cancer Society, a trustee of the Alumni Association of the University of Oklahoma School of Medicine and a member of the Alpha Omega Alpha. □

Legislative Committee Prepares For Next Session

The second session of Oklahoma's 31st Legislature will convene January 2nd at the State Capitol in Oklahoma City. The OSMA State Legislative Committee, in preparation for this session, has established the association's position on a number of bills that are in the legislative hopper or that are expected to be filed during this session.

At the end of the first session of the 31st Legislature several bills of interest to the OSMA were still in committees and could be considered during this second session. The following is a list of these bills, by number, giving a short synopsis of the bill, its present location in the legislature, and the OSMA's position.

Senate Bills

S.B. 20: An act creating a water commission in the health department authorized to hear water pollution complaints. *Endorsed.* Currently in Senate Committee on Health, Welfare and Veterans Affairs.

S.B. 32: Amending uniform narcotic drug act and authorizing Oklahoma Drug Commission to classify products as dangerous. *Endorsed.* Currently in House Committee on Social Welfare and Public Health.

S.B. 48: Authorizing Board of County Commissioners to contract for ambulance services. *Endorsed.* Currently in House Committee on County, State and Federal Government.

S.B. 95: Providing claimant or attorney may ascertain existence of liability insurance, the amount and provisions in damage cases. *Opposed as would probably increase amounts sought in physicians liability suits.* Senate Committee on Judiciary.

S.B. 116: Prohibiting any practitioner of healing arts from advertising, including chiropractors. *Sponsored and Endorsed.* Senate Committee on Business, Industry and Labor Relations.

S.B. 216: Amending the public health code by fixing minimum requirements for physical facilities for nursing, rest or specialized homes. *Endorsed.* House Committee on Professional and Occupational Regulations.

S.B. 346: Authorizing Board of Health to adopt rules and standards for the storage and dispensing of medicine in hospitals. *Endorsed by House of Delegates.* Senate Committee on Health, Welfare and Veterans Affairs.

S.B. 416: Providing physician and hospitals shall be paid when Workmen's Compensation patient becomes deceased under care. *Sponsored and Endorsed.* House Committee on Insurance.

House Bills

H. B. 710: An act expanding the abortion statutes in Oklahoma. No position was taken by the association on this bill. *Amendments were offered by the association to tighten the bill and protect Oklahoma physicians if it is passed.* Senate Committee on Judiciary.

H.B. 731: Authorizing insurance companies to join together in issuance of insurance coverage supplement to medicare. *Endorsed.* Senate Committee on Business, Industry and Labor Relations.

H.B. 851: Providing one member of the State Board of Health shall be a licensed chiropractor. *Opposed.* House Committee on Social Welfare and Public Health.

H.B. 852: Prohibiting exclusion of chiropractors from certain public programs. *Opposed.* House Committee on Professional and Occupational Regulations.

H. B. 928: Permitting injured employees under Workmen's Compensation to select their own doctor under certain circumstances. *Opposed as would allow expansion of chiropractic.* House Committee on Insurance.

Bills Expected

Bills on the following matters are expected to be introduced in the second session of the 31st Legislature. In preparation for this possibility the OSMA State Legislative Committee has established the association's position. In some instances these bills will be sponsored and introduced by the OSMA.

A bill is to be introduced which will amend the present autopsy consent law as it applies to the state medical examiners system. Under

current state law an autopsy can only be conducted after the district attorney's office received authorization from a district court judge. The bill will amend this law to provide that the state medical examiner, his designated deputy, a county medical examiner or a district attorney may authorize an autopsy. This amendment eliminates the necessity of going before the district judge. However, provision is made to allow any immediate kin of the deceased to protest the autopsy and such a protest must be heard before the district judge within a period of 48 hours.

The OSMA will also introduce and work for the passage of a bill which would define blood and body tissues or any derivatives therefrom as being services and not common commodities of trade.

(As new bills of interest to the medical profession are introduced into the state legislature the *OSMA Journal* and *OSMA News* will report on them.) □

Physicians Filling European Tour

The OSMA sponsored European Tour is booming. Enrollment for the 23-day tour of eight European cities should reach the 50 mark by January 1st. It is estimated that 75-80 people will have signed for the tour by next July.

The tour, July 17th to August 7th of next year, is designed for physicians and their families and is being offered in two parts. The first part is a 16-day main tour featuring visits to London, Stratford-on-Avon, Paris, Lucerne and Rome. The second part is a seven-day extension of the main tour featuring visits to Florence, Venice and Berlin.

The 16-day main tour costs $680.00 which includes air fare to and from Europe from New York City. The seven-day extension costs an additional $149.00 per person. Physicians wishing to take their children, under age 12, will receive a discount of $115.00 per child. In addition there will be a savings if a family group uses one of the several economy "family plans" for air travel between Oklahoma and New York City.

Persons interested in taking only the 16-day main tour are urged to make their reservations as soon as possible. In order for the tour to qualify for the lower air fare rate from Rome to New York City, at least fifteen persons must be on the flight. Therefore, if there are only a few reservations (less than 15) for the main tour, it will be necessary to pay a higher air fare on the return from Rome. The seven-day extension already has enough reservations to qualify for the lower rate.

Physicians interested in taking their families or friends on the tour should contact Mr. Don Blair, Oklahoma State Medical Association, P.O. Box 18696, Oklahoma City, Oklahoma 73118 or telephone area code 405, VI 2-3361. □

Medical and Bar Groups Reactivating Joint Committee

The joint OSMA and Oklahoma Bar Association Medical-Legal Relations Committee met in late November for the first time in nearly two years. Barton Carl, M.D., OSMA Committee Chairman, and George Short, LL.B., OBA Committee Chairman, called the joint meeting in an effort to reactivate the committee.

The joint committee meeting, held in the Oklahoma Bar Association Center, resulted in the establishment of a list of goals and objectives for the two statewide organizations.

Both the OSMA and the OBA pledged to work toward revitalization of joint medical-legal committees on the local level. The state committee will furnish guides or suggested activities for these local committees, such as annual doctor-lawyer banquet meetings and interprofessional grievance-settling mechanisms.

The two committees agreed to jointly sponsor a medical-legal institute during the summer of 1968 at Fountainhead Lodge on Lake Eufaula. The program, to be arranged by Mr. Short and Doctor Carl, is to be of general interest to both attorneys and doctors in the state of Oklahoma.

A very successful medical-legal institute was held in July, 1966, and jointly sponsored by the Oklahoma County Medical Society and the OBA.

Other joint activities of the two committees will include programs on educational television stations of interest to both attorneys and doctors, articles of joint interest to both professions will be exchanged between the respective publications of their associations, and the committees will work toward common legislative goals in order to eliminate or relax tension-building interprofessional situations.

A second meeting of the joint committee will be held on January 6th in the Oklahoma Bar Association Center, Oklahoma City. □

Association Dues Payable January 1st

The 1968 dues for the county, state and national medical organizations are due and payable on January 1st, 1968 and are delinquent on March 31st. Dues for the OSMA and AMA are unchanged and remain $75.00 and $70.00 respectfully for a total of $145.00.

All physicians will receive a standardized dues statement from their county medical society secretary-treasurer. The statement will show the amount of the county dues and the state and national dues. It also gives each member of the association the opportunity to join voluntarily the Oklahoma Medical Political Action Committee, known as OMPAC, for $20.00.

The standardized statement including the opportunity to join OMPAC was authorized by the House of Delegates in order to provide all association members with the opportunity to voluntarily join OMPAC and AMPAC in the course of paying their medical association dues.

The statement also lists the AMA specialty journals available to dues-paying members and each physician may choose the one he wishes to receive in addition to the *AMA News*, *JAMA* and *Todays Health*. □

BOOK REVIEW

LESSONS FROM CHILDHOOD: Some Aspects of the Early Life of Unusual Men and Women, by R. S. Illingworth and C. M. Illingworth. 384 pp., Baltimore, Maryland, The Williams and Wilkins Company.

This is an interesting book by two distinguished English pediatricians. In the preface the authors point out that they are pediatricians interested in growth and development rather than biographers. A question often asked is, "what factors in the child's formative years are most important in helping him to grow into an effective adult?" We wonder about the role of the child's home, his parents, his health, his school and, of course, the various facets of his intelligence structure—intellectual curiosity and others. The authors particularly emphasize the early signs of genius and the failure to recognize early signs of unusual talents. They review various influences in the lives of 450 notable men and women, most famous but some infamous.

Eight of the 14 chapters deal with various powerful influences resulting in or modifying the remarkability of an individual such as home and upbringing, education at home, early personality, unrecognized ability, physical difficulties, relation to parents, and others. In each chapter they review pertinent examples of widely known persons.

The book is not strictly biographical although it contains much of historical interest. The information about the men and women derived from the prodigious review by the authors gives the book an encyclopedic tone.

The reader will find many vignettes of interest about famous figures. For example, the fact that Adolph Hitler's performance in school was wretched; that much of Joseph Goebbel's career was influenced by the sequelae of poliomyelitis in early childhood, the early unhappy life of Eleanor Roosevelt. Many of the world's greatest scientists showed little or no promise at school—Sir Isaac Newton, Charles Darwin, Thomas Edison, Albert Einstein, John Hunter, and others.

The main conclusion the Illingworths draw is that the most striking feature of the early phase of all of these men and women is the absence of a pattern. They came from the best and worst of what society, education and family can offer. The authors admit that it is impossible to answer, except vaguely, the questions whether these people were remarkable because of their frustrations or in spite of them. Parents, teachers, pediatricians and behavioral scientists will read with interest the description of "difficult" children who emerged with great contributions.

In this day and age when the byword is improvement in economic opportunity, it is of interest that some thirty men of fame emerged from the poorest possible homes.

The book can be recommended for all who work with children.—*Harris D. Riley, Jr., M.D.* □

MEDICINE and RELIGION CONFERENCE

February 2nd-3rd, 1968 **Center for Christian Renewal**

Oklahoma City

Theme:

"The Whole Man and the World of Changing Morals"

The two-day conference will be sponsored by the OSMA Committee on Medicine and Religion and the Oklahoma Council of Churches.

Miscellaneous Advertisements

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If it doesn't work in a week, forget it.

Contraindications: Edema; danger of cardiac decompensation; history or symptoms of peptic ulcer; renal, hepatic or cardiac damage; history of drug allergy; history of blood dyscrasia. The drug should not be given when the patient is senile or when other potent drugs are given concurrently. Large doses of Butazolidin alka are contraindicated in glaucoma.

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Adverse Reactions: The most common are nausea, edema and drug rash. Swelling of the ankles or face may be minimized by withholding dietary salt, reduction in dosage or use of diuretics. In elderly patients and in those with hypertension the drug should be discontinued with the appearance of edema. The drug has been associated with peptic ulcer and may reactivate a latent peptic ulcer. The patient should be instructed to take doses immediately before or after meals or with milk to minimize gastric upset. Mild drug rashes frequently subside with reduction of dosage. However, rash accompanied by fever or other systemic reactions usually requires withholding medication. Purpuric rash has also been reported. Agranulocytosis, ex-

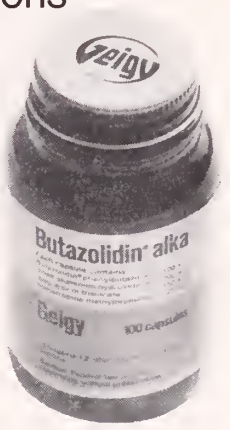
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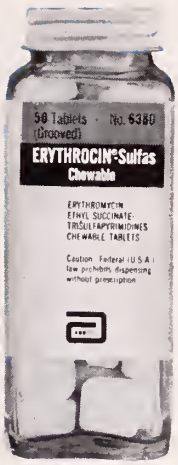
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In clinical trials[1,2], this orange-flavored tablet was given to 55 patients, aged four months to 18 years.

Diagnoses (multiple in some cases) represented a cross section of bacterial infections commonly seen in pediatric office practice.

Therapy was given from three to 12 days, with an average of six days.

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The diagnoses were multiple in some cases and were chiefly bacterial infections of the respiratory tract.

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53 were clinically cured within 72 hours, while 32 showed partial relief within the same time, and subsequent clinical cure.

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A clinical cure rate of 97.7%

1. Case Reports on File, Dept. Clin. Development, Abbott Laboratories.
2. Polley, R.F.L., Use of Erythromycin-Sulfas in Office Practice, Western Med., 7:177, July, 1966.

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Brief Summary on next page

ERYTHROCIN®-SULFAS
Brief Summary

Contraindications: Known sensitivity to erythromycin or sulfonamides. Because of the possibility of kernicterus with sulfonamides, do not use in pregnancy at term, premature or newborn infants.

Warnings: As with other forms of sulfonamide therapy, carefully evaluate patients with liver or kidney damage, urinary obstruction, or blood dyscrasia. Deaths have been reported from hypersensitivity reactions and blood dyscrasias following use of sulfonamides. Perform blood counts and liver and kidney function tests if used repeatedly at close intervals or for long periods.

Precautions, Side Effects: Occasionally mild abdominal discomfort, nausea or vomiting may occur with erythromycin, generally controlled by reduction of dosage. Mild allergic reactions (such as urticaria and other skin rashes) may occur. Serious allergic reactions have been extremely infrequent. Use sulfonamides with caution in patients with a history of allergy. Assure adequate fluid intake to prevent crystalluria and institute alkali therapy if indicated. If overgrowth of nonsusceptible organisms occurs, withdraw the drug and institute appropriate treatment. If a patient should show signs of hypersensitivity, appropriate countermeasures (e.g. epinephrine, steriods, etc.) should be administered and the drug withdrawn.

Adverse Reactions: Sulfonamide therapy may be associated with headache, nausea, vomiting, urticaria, diarrhea, hepatitis, pancreatitis, blood dyscrasias, neuropathy, drug fever, skin rash, injection of the conjunctiva and sclera, petechiae, purpura, hematuria and crystalluria.

Side effects due to erythromycin are infrequent, but occasional abdominal discomfort, nausea, or vomiting, urticaria and other skin rashes may occur.

Supplied: The Granules for Oral Suspension come in bottles of 60 ml. and 150 ml. The Chewable tablets are in bottles of 50. Each 5-ml. teaspoonful of reconstituted Granules or each Chewable tablet provides erythromycin ethyl succinate equivalent to 125 mg. of erythromycin activity and 167 mg. of each of sulfadiazine, sulfamerazine and sulfamethazine.

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DECEMBER 5th

ANGIOGRAPHY, PART 1: Techniques

(30 Min.)

Allen D. Callow, M.D., Professor of Surgery
Paul C. Kahn, M.D., Assistant Professor of Radiology
Tufts University School of Medicine

DECEMBER 12th

ANGIOGRAPHY, PART II: Clinical Considerations

(30 Min.)

Participants same as Part I

DECEMBER 19th

LUPUS ERYTHEMATOUS AND RELATED DISORDERS, PART I

(30 Min.)

Robert P. McCombs, M.D., Professor of Graduate Medicine
Robert S. Schwartz, M.D., Professor of Medicine
Tuffs University School of Medicine

DECEMBER 26th

LUPUS ERYTHEMATOUS AND RELATED DISORDERS, PART II

(30 Min.)

Participants same as Part I

Sponsors

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after surgery

B and C vitamins are therapy: Therapeutic amounts of B and C in stress formula vitamins often are vital during periods of physiologic stress. STRESSCAPS capsules, designed to meet increased metabolic demands, aid in achieving a more comfortable convalescence, a more rapid recovery. After surgery, as in many stress conditions, STRESSCAPS vitamins are therapy.



Stresscaps®

Stress Formula Vitamins Lederle

FOR PROFESSIONAL RECOMMENDATION ONLY

Each capsule contains:

Vitamin B_1 (Thiamine Mononitrate)	10 mg
Vitamin B_2 (Riboflavin)	10 mg
Vitamin B_6 (Pyridoxine HCl)	2 mg
Vitamin B_{12} Crystalline	4 mcgm
Vitamin C (Ascorbic Acid)	300 mg
Niacinamide	100 mg
Calcium Pantothenate	20 mg

Recommended intake: Adults, 1 capsule daily, for the treatment of vitamin deficiencies. Supplied in decorative "reminder" jars of 30 and 100; bottles of 500.

LEDERLE LABORATORIES, A Division of American Cyanamid Company, Pearl River, New York

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When the agitated geriatric disrupts the home...

His teen-age granddaughter won't invite friends home because of his outbursts.



for moderate to severe anxiety

Mellaril®
(thioridazine)
25 mg. t.i.d.

SANDOZ

His slovenly room and habits create more tension.

His disturbances at the table make every meal a nightmare.



His daughter can't please him. There is "just no living with him."

See following page for prescribing information.

When the agitated geriatric disrupts the home...

Anxiety that seriously interferes with the individual's performance at work, at home, or in the community may be regarded as *moderate* to severe in degree.

Mellaril often recommends itself to the treatment of moderate to severe anxiety because it

- helps control the most frequent symptoms: marked tension, agitation, apprehension, restlessness, hypermotility
- often alleviates anxiety-induced somatic complaints
- frequently helps strengthen emotional resources
- helps the patient maintain realistic contact with environment, closer harmony with family

Thus, when you consider the anxiety moderate to severe... consider Mellaril.

Contraindications: Severely depressed or comatose states from any cause, and in association with or following MAO inhibitors; severe hypertensive or hypotensive heart disease.

Precautions: Hypersensitivity reactions (e.g., leukopenia, agranulocytosis) and convulsive seizures are infrequent. Pigmentary retinopathy has been observed where doses in excess of those recommended were used for long periods of time. May potentiate central nervous system depressants, atropine, and phosphorus insecticides. Where complete mental alertness is required, administer the drug cautiously and increase dosage gradually. In addition, orthostatic hypotension (especially in female patients) has been observed. Epinephrine should be avoided in treatment of drug-induced hypotension.

Side Effects: Pseudoparkinsonism and other extrapyramidal disorders are infrequent; drowsiness, especially in high doses early in treatment, may occur; nocturnal confusion, dryness of the mouth, nasal stuffiness, headache, peripheral edema, lactation, galactorrhea, and inhibition of ejaculation are noted on occasion; photosensitivity and other allergic skin reactions may occur but are extremely rare.

Before prescribing, see package insert for full product information.

for moderate to severe anxiety

Mellaril®
(thioridazine)
25 mg. t.i.d.

SANDOZ

mudrane®

for

- EMPHYSEMA
- ASTHMA
- CHRONIC BRONCHITIS
- BRONCHIECTASIS

The fast-disintegrating uncoated tablet gives relief in 15 minutes

Each tablet contains:

Potassium Iodide	195 mg.
Aminophylline	130 mg.
Phenobarbital, Caution: May be habit forming...	21 mg.
Ephedrine HCl	16 mg.

FEDERAL LAW PROHIBITS
DISPENSING WITHOUT PRESCRIPTION

Precautions: Usual for aminophylline-ephedrine-phenobarbital. Iodides may cause nausea, long use may cause goiter. Discontinue if symptoms of iodism develop.

Iodide contraindications: tuberculosis, pregnancy.

DOSAGE

One tablet, with full glass of water, 3 or 4 times daily.

Dispensed in bottles of 100 and 1000 tablets.

MUDRANE GG—Formula, dosage and package identical to Mudrane—*except*—100 mg. glyceryl guaiacolate replaces the potassium iodide. The value of Mudrane cannot be enjoyed by a small group in which K.I. is contraindicated. Mudrane GG is prepared for this group.

MUDRANE GG ELIXIR—Four 5 cc teaspoonfuls is equivalent to one Mudrane GG tablet. Dosage adjusted to age and weight of child. Mudrane GG Elixir is for pediatric patients and those who think they cannot swallow tablets. Dispensed in pint and half gallon bottles.

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Vasomist

(ANTIHISTAMINIC) VASOCONSTRICTOR, NASAL DECONGESTANT AND LOCAL ANTIHISTAMINIC

Active Ingredients:
Phenylephrine Hcl 0.25%
Phenylpropanolamine Hcl .. 0.50%
Chlorobutanol 0.15%
Tripelennamine Hcl 0.50%
In Isotonic Solution

Vasomist

(PLAIN)

VASOCONSTRICTOR AND NASAL DECONGESTANT

Active Ingredients:
Phenylephrine Hcl 0.25%
Phenylpropanolamine Hcl ... 0.50%
Chlorobutanol 0.15%
In Isotinic Solution

USE: Temporary relief of nasal congestion due to colds and hay fever.
DIRECTIONS: Adults and Children: Instill two or three drops into each nostril, using no more than needed to provide relief. Repeat every three to four hours as needed but not oftener.

AVAILABILITY
In plastic squeeze bottles containing ¾ fluid oz. and in dropper bottles containing 1 fluid oz.

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Synirin®

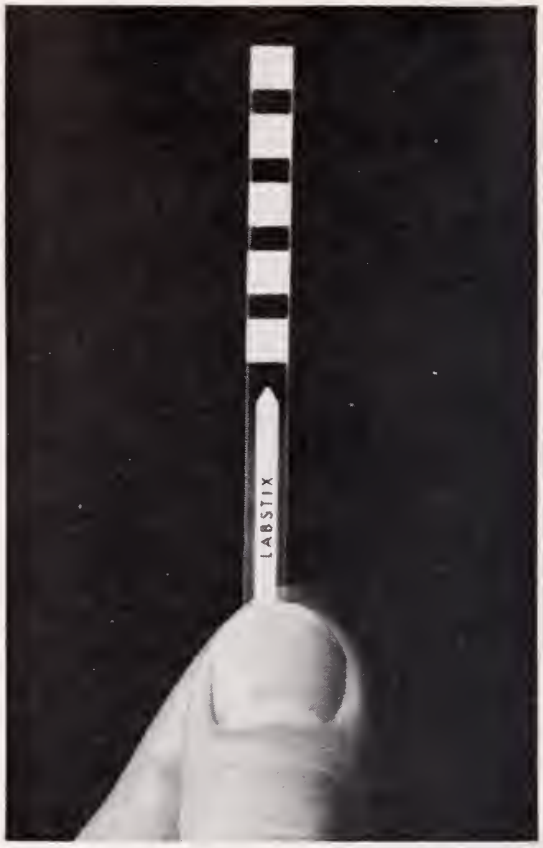
ACETYLSALICYLIC ACID (ASPIRIN)..... 5 GR.
*PENTOBARBITAL (ACID)..... 1/8 GR.
*Warning: may be habit-forming

Synirin provides prompt barbiturate potentiation of aspirin without limiting the therapeutic usage of aspirin. Both pentobarbital and aspirin begin their action together promptly and last 4 or 5 hours. There is no accumulation.

LITERATURE AND CLINICAL SUPPLY AVAILABLE TO PHYSICIANS

SYNIRIN is another pharmaceutical achievement

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Take five...

LABSTIX® provides 5 important urinary findings*—on a single reagent strip! That's *more* information than you can get from any other single reagent strip. You know the results in just 30 seconds—while the patient is still in your office—and readings are reliable and reproducible. LABSTIX is easy to handle, too. Never goes limp, even when wet, because it's made with clear, firm plastic. And results with LABSTIX are easy to read—color contrast between the test areas and the transparent plastic is clearly defined. An unexpected "positive" from testing with LABSTIX may help in detecting hidden pathology before marked symptoms are manifest.

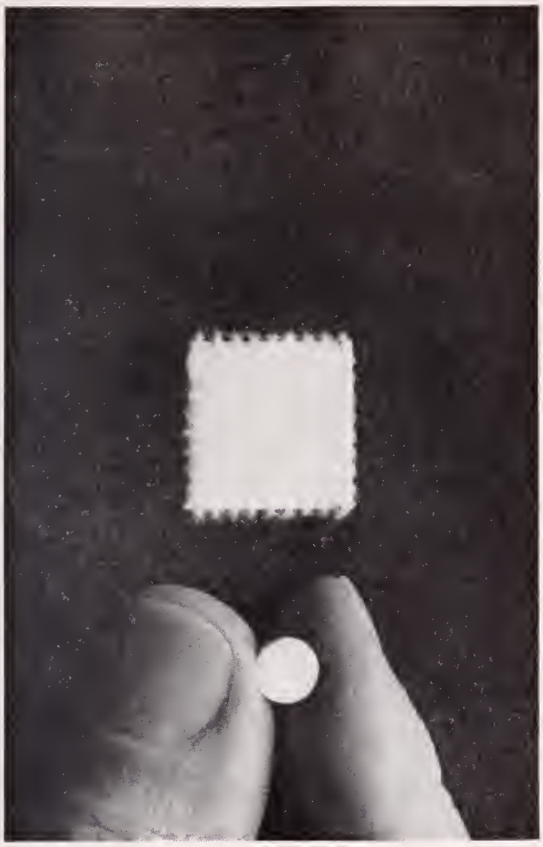
*Blood; ketones; glucose; protein, and pH.

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Note: *AMERICAN HOSPITAL FORMULARY SERVICE CATEGORY NUMBER 36:88*

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...Plus one

You can extend your testing scope by including ICTOTEST® Reagent Tablets, the 30-second determination for bilirubinuria—which can be an early sign of obstruction of the common bile duct, infectious hepatitis, or other liver disease. This test is also useful for detecting liver damage from carbon tetrachloride and other halogenated hydrocarbons used as industrial and household solvents. Positive findings with the urine-testing team of LABSTIX and ICTOTEST can represent significant guides to patient management in many clinical situations. "Negatives" may help rule out suspected abnormalities over a broad clinical range and are important for the patient's record.

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removes the mental blur

that clouds vision

SOLFOTON®

Each tablet or capsule contains
PHENOBARBITAL . . . . . 16 mg.
(Warning: may be habit forming)
BENSULFOID® (See P D R) . . . . . 65 mg.
Precaution: same as 16 mg. of phenobarbital



Constructive Therapy

A Solfoton tablet or capsule at 6 hour intervals maintains sedation at the threshold of calmness, sustaining a mental climate for purposeful living.

Literature and clinical samples sent upon request.

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AVAILABLE

Solfoton *(yellow, uncoated tablets "P")*
100s, 500s, 5000s

Solfoton Capsules *(yellow and brown)*
100s, 500s, 1000s

Solfoton S/C *(sugar-coated beige tablets)*
100s, 500s, 4000s

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Diarrhea

TROCINATE® 400 MG.

BRAND THIPHENAMIL HCl.

The relief received from the first Trocinate 400 mg. tablet is so prompt that the discomfort of diarrhea ceases to be a bother. May be repeated every four hours.

Upon request, a supply of Trocinate 400 mg. with literature will be sent to physicians for their personal use.

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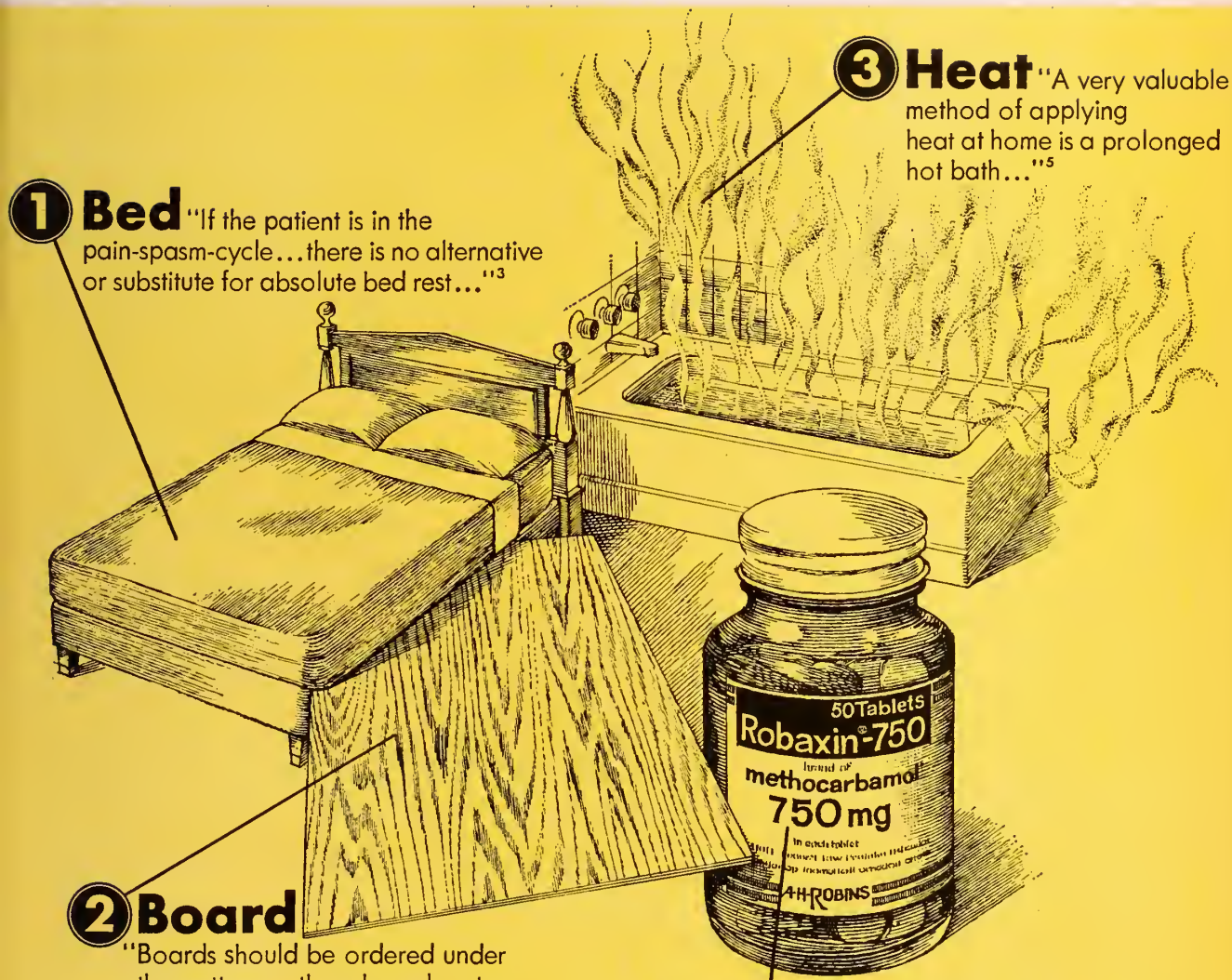
July 17—August 7, 1968



LOW-BACK PAIN

A CONSERVATIVE, FOUR-POINT PROGRAM

The low back pain that is most frequently seen in general practice is mechanical in nature, i.e., postural back pain, joint dysfunction and acute back strain.[1,2] For this type of discomfort, a conservative regimen is usually sufficient to relieve aches and pains, and to help keep the patient functioning. Components of this basic program include:



1 Bed "If the patient is in the pain-spasm-cycle...there is no alternative or substitute for absolute bed rest..."[3]

2 Board "Boards should be ordered under the mattress...these boards act by immobilizing the spine..."[4]

3 Heat "A very valuable method of applying heat at home is a prolonged hot bath..."[5]

4 Robaxin®-750 (methocarbamol, 750 mg. capsule-shaped tablets) A well-tolerated[6] skeletal muscle relaxant, methocarbamol helps relieve spasm "...without interfering with normal tone and movement."[7] And there is little likelihood of sedation.[6]

Indicated for relief of skeletal muscle spasm. **Contraindicated** in hypersensitive patients. **Side Effects** (lightheadedness, dizziness, drowsiness, nausea) may occur rarely, but usually disappear on reduced dosage. Hypersensitivity reactions develop infrequently. See product literature for further details. **Also available:** Robaxin® Tablets (methocarbamol, 500 mg.) Robaxin Injectable (methocarbamol, 1 Gm./10 cc.)

References: (1). Godfrey, C.M.: Applied Therap. 8:950, 1966. (2). Gottschalk, L.A.: GP 33:91, 1966. (3). Rowe, M.L.: J. Occup. Med. 2:219, 1960. (4). Cozen, L.: South Dakota J. Med. 18:26, 1965. (5). Soto-Hall, R.: Med. Sc. 14:23, 1963. (6). Weiss, M. and Weiss, S.: J. Am. Osteopath. A. 62:142, 1962. (7). Feuer, S.G., *et al.*: New York J. Med. 62:1985, 1962.

A·H·ROBINS A. H. ROBINS COMPANY RICHMOND, VIRGINIA 23220



"Yes, Doctor, the pain is gone."

'EMPIRIN'® COMPOUND with CODEINE PHOSPHATE gr. 1/2 No. 3

Each tablet contains: Codeine Phosphate gr. ½ (Warning—May be habit forming), Phenacetin gr. 2½, Aspirin gr. 3½, Caffeine gr. ½.

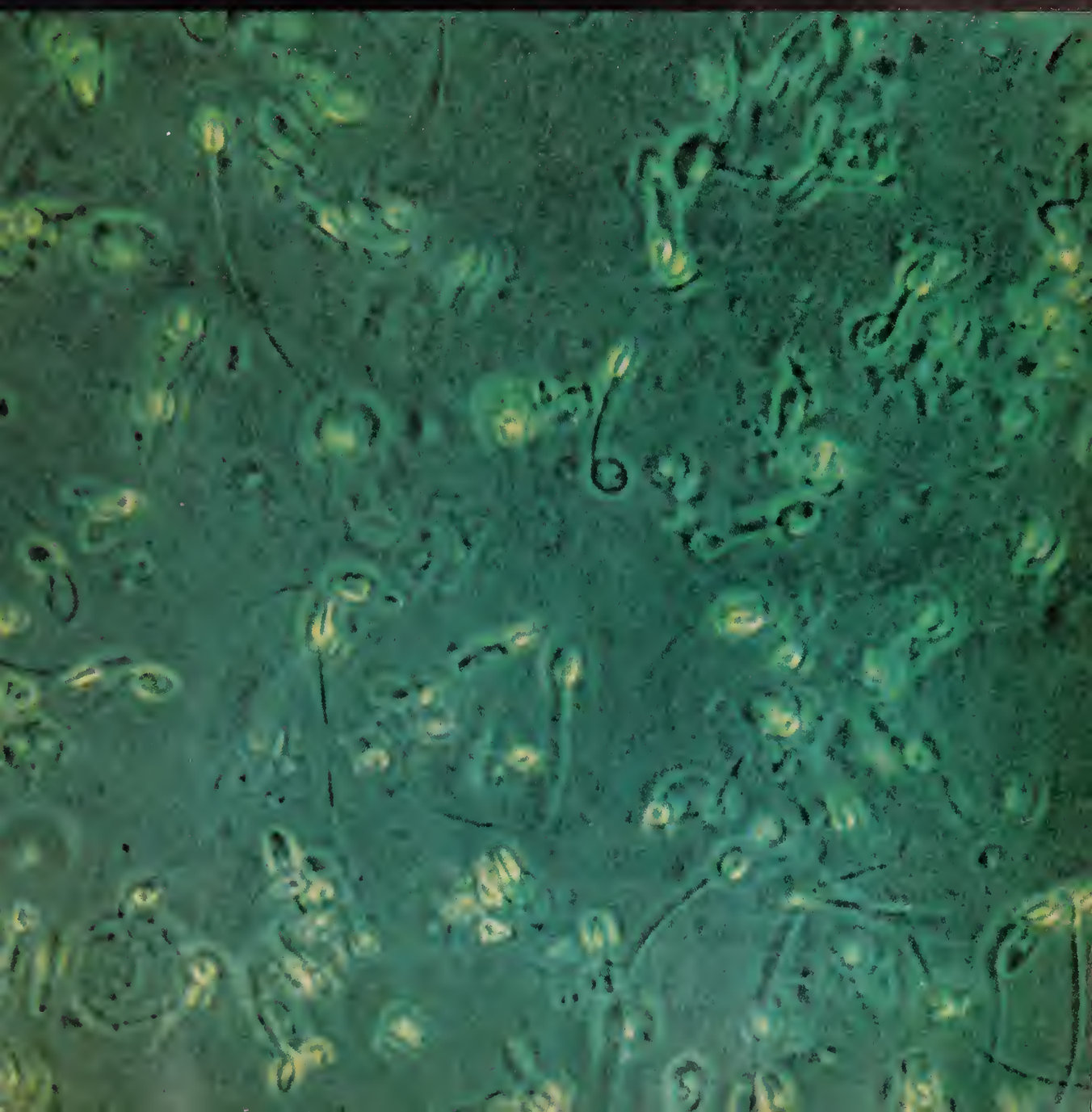
■ Despite introduction of synthetic substitutes, efficacy of 'Empirin' Compound with Codeine remains unchallenged.

BURROUGHS WELLCOME & CO. (U.S.A.) INC., Tuckahoe, N.Y.

When the talk turns to oral contraceptives, it makes medical sense to remember low-dose Norinyl®-1.

(norethindrone 1mg. & mestranol 0.05mg.)

Turn page for contraindications, precautions and side effects.



Reduction of oral contraceptive dosage to the lowest effective levels is a well-accepted principle of conservative medical practice. In keeping with this view, Norinyl is now also available as Norinyl-1, containing exactly one half the previous dosage of norethindrone and mestranol. Clinical experience has established that effective fertility control can be achieved with the same degree of reliability and safety with new Norinyl-1 when taken as directed.

What about switching patients from higher dosage forms?

In transferring patients to low-dose Norinyl-1 from higher-dosage oral contraceptives, some breakthrough bleeding may occur in the early cycles. In the majority of cases the bleeding episode is mild and self-limited. The long-term advantages of the lower dosage form should be weighed against the inconvenience of possible breakthrough bleeding in the individual patient.

Prescribing Information

Contraindications: Patients with any symptoms or history of thrombophlebitis, pulmonary embolism, liver dysfunction or disease, carcinoma of breast or genital organs, or undiagnosed vaginal bleeding.

Warnings: Discontinue medication pending examination if there is sudden partial or complete loss of vision, proptosis, diplopia or migraine. If examination reveals papilledema or retinal vascular lesions, medication should be withdrawn. The safety of Norinyl-1 in pregnancy has not been demonstrated. If a patient misses two consecutive periods, pregnancy should be ruled out before continuing the medication. If she has not adhered to the prescribed schedule, pregnancy should be considered at the first missed period. Active ingredients of oral contraceptives have been detected in the milk of mothers who received these drugs; the significance to infants has not been determined.

Precautions: Pretreatment physical should include examination of the breasts and pelvic organs, as well as a Papanicolaou smear. If endocrine or liver function tests are abnormal during therapy, repeat tests are recommended after the drug has been withdrawn for two months. Following administration of drug, preexisting uterine fibromyomata may increase in size. Careful observation and caution are required for patients with symptoms or history of epilepsy, migraine, asthma, cardiac or renal dysfunction, cerebrovascular accident, psychic depression, and diabetes. In cases of undiagnosed vaginal bleeding, adequate diagnostic measures are indicated. Possible long-term effects of the drug on pituitary, ovarian, adrenal, hepatic or uterine function must await further studies. The physician should be alert to the earliest manifestations of thrombophlebitis and pulmonary embolism. The drug should be used judiciously in those young patients in whom bone growth is not complete. The age of the patient constitutes no absolute limiting factor, although treatment with Norinyl-1 may mask symptoms of the climacteric. The pathologist should be advised of Norinyl-1 therapy when relevant specimens are submitted.

Side Effects: The following have been observed with varying incidenc in patients receiving oral contraceptives: nausea, vomiting, gastrointestinal symptoms, breakthrough bleeding, spotting, change in menstrual flow, amenorrhea, edema, chloasma or melasma, breast change (tenderness, enlargement and secretion), change in weight (increase or decrease), changes in cervical erosion and cervical secretions, suppression of lactation when given immediately postpartum, cholestatic jaundice, migraine, rash (allergic), rise in blood pressure in susceptible individuals, mental depression. Although the following side effects have been reported in users of oral contraceptives, no cause and effect relationship has been established: anovulation posttreatment, premenstruallike syndrome, changes in libido, changes in appetite, cystitislike syndrome, headache, nervousness, dizziness, fatigue, backache, hirsutism, loss of scalp hair, erythema multiforme, erythema nodosum, hemorrhagic eruption, and itching. The following occurrences have been observed in users of oral contraceptives (a cause and effect relationship has neither been established nor disproved): thrombophlebitis, pulmonary embolism, neuroocular lesions.

The following laboratory tests may be altered by the use of oral contraceptives: increased sulfobromophthalein and other hepatic function tests, coagulation tests (increase in prothrombin, factors VII, VIII, IX and X), thyroid function (increase in PBI and butanol extractable protein-bound iodine and decrease in T^3 values), metyrapone test, pregnanediol determination.

norethindrone — an original steroid from

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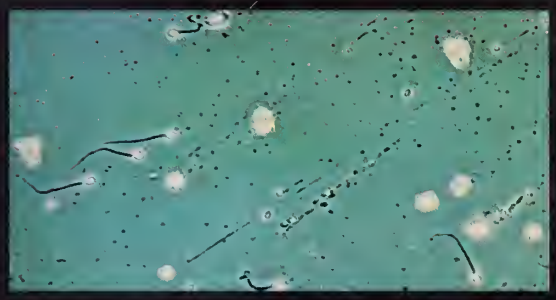
Here's why Norinyl-1 makes medical sense.

The effectiveness of Norinyl-1 as a low-dose oral contraceptive may be explained by its possible multiple action. In addition to its primary action of suppression of ovulation, Norinyl-1 may offer additional protective mechanisms... (1) creation of a cervical mucus that may be hostile to sperm penetration, and (2) development of an endometrium that may be out of phase with nidation. These effects are illustrated below.

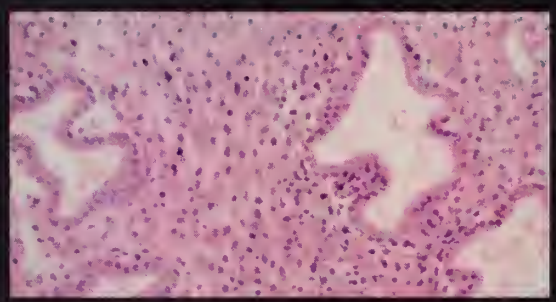
Untreated Patient



Cervical mucus at midcycle is usually thin and watery, with Spinnbarkeit (stretchability) of 15 to 20 cm.



Spermatozoa appear healthy, active, freemoving.

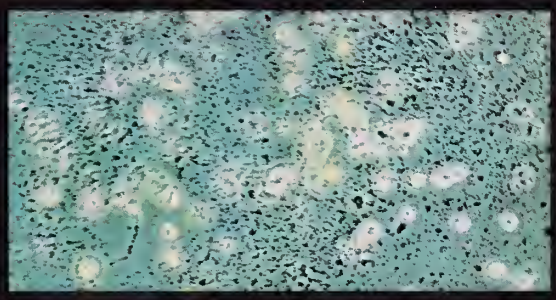


Endometrium of untreated patient is receptive to the fertilized ovum during secretory phase.

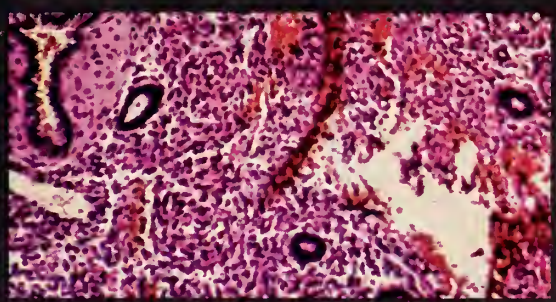
Norinyl-1 Patient



Cervical mucus at midcycle is scanty, viscous—with Spinnbarkeit of 1 cm. or less.



Immobile spermatozoa as they appear in cervical mucus taken from patient treated with Norinyl-1.



Norethindrone in Norinyl-1 accelerates secretory phase, suppresses glandular and vascular development.

Norinyl®-1 tablets
(norethindrone 1mg c mestranol 0.05mg.)

- new low dose of time-proved ingredients
- established norethindrone/mestranol ratio
- lower patient cost

An uncommon steroid for common inflammatory dermatoses

In everyday topical steroid therapy, Synalar produces rapid resolution of inflammation and itching in steroid-responsive dermatoses—and at relatively low cost to the patient.

Advanced molecular design enhances potency

Synalar combines the advantage of earlier corticosteroid compounds with unique structural innovations. As a result, preparations of Synalar 0.01% and Synalar 0.025% have been reported to be more potent topically and significantly more effective than hydrocortisone 1.0%. The unique fluocinolone acetonide molecule provides one of the most useful topical corticosteroids for everyday practice.

Impressive clinical results in a wide range of dermatologic problems

The clinical efficacy of Synalar has been extensively documented in the world literature. Commonly encountered diseases such as allergic and contact dermatitis, eczematous and seborrheic dermatitis, and neurodermatitis respond rapidly to Synalar, often where previous therapy with other topical corticosteroids has failed.

Low patient cost for wider usefulness

With Synalar, a high degree of efficacy does not mean high price. And—a small quantity goes a long way. Thus, your patients can often obtain the "economy" of a hydrocortisone preparation with the proved efficacy of a potent, truly advanced steroid.

Synalar®
fluocinolone acetonide





Turn page for contraindications, precautions and side eff

For everyday topical steroid therapy

Synalar® 0.01%

fluocinolone acetonide provides economy in two practical dosage forms

For general use, the most economical and widely applicable concentration of Synalar is 0.01% Cream in a water-washable, vanishing cream base. Synalar Solution 0.01% is especially valuable in dermatoses involving moist, intertriginous areas or hairy sites where creams and ointments do not spread or penetrate readily. Synalar Solution is a unique dosage form—clear, nongreasy, cosmetically elegant.

Product Information

Contraindications: Tuberculous, fungal, and most viral lesions of the skin (including herpes simplex, vaccinia, and varicella). Not for ophthalmic use. Contraindicated in individuals with a history of hypersensitivity to any of the components. *Precautions:* Synalar preparations are virtually nonsensitizing and nonirritating. However, the solution may produce burning or stinging when applied to denuded or fissured areas. In some patients with dry lesions, the solution may increase dryness, scaling or itching. Where severe local infection or systemic infection exists, the use of systemic antibiotics should be considered, based on susceptibility testing. While topical steroids have not been reported to have an adverse effect on pregnancy, the safety of their use on pregnant females has not absolutely been established. Therefore, they should not be used extensively on pregnant patients, in large amounts, or for prolonged periods of time. *Side Effects:* Side effects are uncommon with topical corticosteroids. As with all drugs, however, a few patients may react unfavorably to Synalar under certain conditions. In such cases the agent should be discontinued and appropriate measures taken. *Availability:* Synalar (fluocinolone acetonide) Cream 0.025%—5, 15 and 60 Gm. tubes and 425 Gm. jars. Cream 0.01%—15, 45 and 60 Gm. tubes and 120 Gm. jars. Solution 0.01%—20 and 60 cc. plastic squeeze bottles. Ointment 0.025%—15 and 60 Gm. tubes. Neo-Synalar® (neomycin sulfate 0.5% [0.35% neomycin base], fluocinolone acetonide 0.025%) Cream—5, 15 and 60 Gm. tubes.

fluocinolone acetonide — an original steroid from

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LABORATORIES INC., PALO ALTO, CALIF.



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The JOURNAL *of the Oklahoma State Medical Association*

CONTRIBUTIONS

Articles accepted for publication, including manuscripts of annual meeting papers, are the sole property of the *Journal* and must not have been published elsewhere. Authority for approval of all contributions rests with the Editorial Board, and the Board reserves the right to edit any material submitted. Manuscripts should be typewritten, double-spaced and submitted in original and one copy. Receipt of manuscripts will be acknowledged and unused manuscripts returned. Used manuscripts will be returned on request. The *Journal of the Oklahoma State Medical Association* is not responsible for the statements or opinions of any contributor.

STYLE

Footnotes, bibliographies, and legends for illustrations should be submitted on separate sheets, double-spaced. Bibliographies should follow in order of: name of author, title or article, name of periodical with volume number, page and date of publication. These references should be alphabetized and numbered in sequence.

ILLUSTRATIONS

Illustrations, other than the author's, will not be accepted for publication unless accompanied by written permission to be reproduced. Illustrations should be identified by the author's name and the figure number of the illustrations. The illustrations should be numbered in the same order as referred to in the body of of the article. Used photographs, and drawings will be returned after publication if requested. The *Journal* will pay for necessary black and white illustrations within reasonable limitations. The quality of drawings, sketches, etc., must be in keeping with the quality of the magazine.

NEWS

Members of the Oklahoma State Medical Association, the constituent societies of the association, and all readers in general are invited to supply news items of general interest to the profession. Such copy should be received one month prior to the expected date of publication.

ADVERTISING

All advertising copy must be approved by the Editorial Board before acceptance for publication. Copy and/or engravings must reach the *Journal* office by the first of the month preceding the month of publication. General and miscellaneous advertising rates will be sent on request.

EDITING SERVICE

The Editorial Board reserves the prerogative to submit contributions to a Medical Editing Service when warranted. If such is felt necessary, the Editor will contact the author for approval, informing him that there will be a modest charge for this service.

REPRINTS

Authors will receive reprint order forms from the Transcript Press, P.O. Drawer 1058, Norman, Oklahoma 73069, prior to final publication of their articles. Other requests for reprints must be made to the Transcript Press within 30 days after publication.

BACK ISSUES

Microfilm copies of back issues of *The Journal* may now be purchased from University Microfilms, 300 North Zeeb Road, Ann Arbor, Michigan 48106.

Since the founding of our auxiliary in 1907, our goals and objectives have been clearly defined. Our main purpose is to assist the medical association in its program for the advancement of medicine and public health. We have been asked to serve this year on many committees of the association. This will enable us to work closer with the association and become better informed about the tremendous work the association does in all areas. I hope that each of you, whether you are a member of an auxiliary, or a member-at-large, will become aware of the health needs in your community and cooperate with health agencies in solving the ever increasing health problems of your respective community.

Do cooperate so well and with such an impact that the community will be aware of what you are doing. If there is an unmet health need in your community you have the opportunity of undertaking your own program and then enlist the help of other organizations. This is good! Whether you are leading or following make an impact by doing a splendid job.

Doctors' wives as a group or individually must be aware of their public relations responsibilities. We cannot take for granted that our image is a good one. As auxiliary members or members-at-large we are tremendous ambassadors—either good or bad —for the medical profession whether we give thought to it or not. We must stand up and be counted, as a prestige group that not only serves, but serves unusually well.

Each of you receive *MD's Wife*, our national magazine. With the November issue they are carrying a new advertising style. A two-page spread of mail order ads from top quality firms may become a standard feature, appearing in future issues. The merchandise shown will be of value not only for personal shopping but also for Christmas gift ideas. Your support of this project, as well as all advertising in *MD's Wife*, will be appreciated. If you like this idea, why not drop them a line. They will appreciate hearing from you.

Do you know someone who has radio equipment which is not in use? Through project MEDAID such equipment can be employed as a life-saving link between doctors and people in far away places who need immediate medical advice and directives. For examples of the way such equipment is being used to save lives, read "Radio Network Helps Doctors Save Lives" in the September issue of *MD's Wife*. Contact Mrs. John Kienzle, Shawnee, Oklahoma, if you can help, and she will give you information as to shipment of equipment.

AN IMPORTANT DATE. January 9th, 1968 will be Doctors' Wives Day at the State Legislature. A very interesting agenda has been planned. For this day to be a success we need for you to come and show your interest in what kind of health legislation our Legislature will be considering during this session. Can we count on YOU? □

AMA Meeting Highlights: At the November Clinical Meeting of the AMA House of Delegates in Houston, the following actions were taken:

- Research on improved methods in the delivery of health services was encouraged.
- The importance of a proper balance between medical school teaching and research activities was stressed.
- Alarm was stated over the growing trend toward establishing medical care standards at the national level.
- AMA committed itself to leadership in informing the public as to practical means of moderating health care costs, the value of health insurance, and expanding the medical manpower supply.
- Support for direct billing of Medicare and Medicaid patients was reaffirmed.
- State associations were urged to hold regional conferences with state legislators on health matters of common interest.
- The acceptance of physicians as appointees to hospital boards of control was emphasized.

Polio Cases On The Rise. The National Communicable Disease Center reports that there were 102 cases of polio in 1966 compared to 61 cases in 1965 and 91 cases in 1964. The percentage of preschool children with adequate immunization against polio dropped from 74 per cent in 1965 to 70 per cent in 1966.

2.8 Million Persons Serve the Health Professions and Occupations, according to a Publice Health Service report. The manpower survey encompasses 140 health professions and occupations and some 300 job titles are identified.

Oklahoma Council for Health Careers Moves Forward. A new health careers council supported by health professional organizations in Oklahoma has raised an operating budget of over $16,000 to date. Nearly $10,000 of the budget has been committed for the purchase of promotional material to attract more young Oklahomans into the health careers. Tom C. Points, M.D., is chairman of the board and Kenneth Hager is executive director.

20 Per Cent of Oklahoma Nurses Unemployed. According to a 1967 report by the Oklahoma Board of Nurse Registration, there are 6,781 Registered Nurses in Oklahoma, but only 4,589, or about 80 per cent are known to be employed. There are 4,020 Licensed Practical Nurses, and 2,651 are known to be employed.

State Teachers Lead in Education. 99.1 per cent of Oklahoma's teachers have at least bachelors degrees, tops in the nation. More than 40 per cent have advanced degrees. Moreover, the state leads in the percentage of highschool graduates who go on to college with over 65 per cent enrolling.

Presidency is Hazardous. A survey of presidential longivity by the Metropolitan Life Insurance Company reveals that the average post-Civil War president lived 63.4 years, or 7.6 years less than normal life expectancy at the time of inauguration.

Department of Public Welfare Received $72.1 Million From Sales Tax in 1967. Sales tax apportioned to welfare has now passed the billion dollar mark. During the last fiscal year, sales tax collections exceeded all other forms of state revenue, including gasoline tax ($71.6 million) and income tax ($56.6 million).

MEETINGS

Feb. 2nd-3rd, 1968—OSMA Medicine and Religion Conference, Center for Christian Renewal, Oklahoma City

Feb. 5th - 6th, 1968 — Oklahoma Chapter, American Academy General Practice, The Mayo Hotel, Tulsa

May 16th-18th, 1968—OSMA Annual Meeting, Skirvin Hotel, Oklahoma City

DORSEY "FLU-GRAM"

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Acetaminophen	325 mg.

Dosage: Adults—1 tablet, swallowed whole to preserve timed-release feature, in morning, midafternoon and at bedtime. Side effects: Occasional drowsiness, blurred vision, cardiac palpitations, flushing, dizziness, nervousness or gastrointestinal upsets. Precautions: The patient should be advised not to drive a car or operate dangerous machinery if drowsiness occurs. Use with caution in patients with hypertension, heart disease, diabetes or thyrotoxicosis.

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Crying Spells–psychic tension with depressive symptoms?
"I don't know what's the matter with me lately...I cry and I cry... and I really don't know why I do."

A woman often is not conscious of the real reasons for her crying spells or refuses to admit them to herself. On probing, you may find that frequent weeping, like insomnia or neurotic fatigue, often is an expression of psychic tension. She needs sympathy and reassurance, and perhaps a calming agent to help her over her crisis. Consider prescribing Valium (diazepam) for her. It usually reestablishes calmness promptly. Crying spells and other secondary depressive symptoms normally subside as the tension is relieved. Your patient then can cope more easily with stresses to which she is subjected. Valium (diazepam) is generally well tolerated, and on proper mainteenance dosage usually does not impair mental acuity or ability to function. If side effects such as ataxia and drowsiness occur, they usually disappear with dosage adjustment.

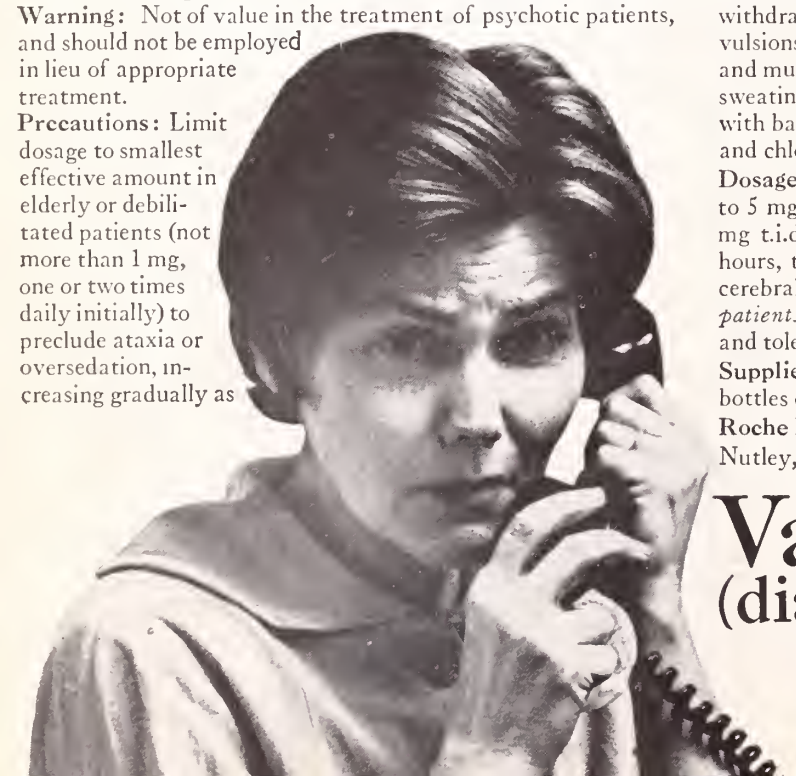


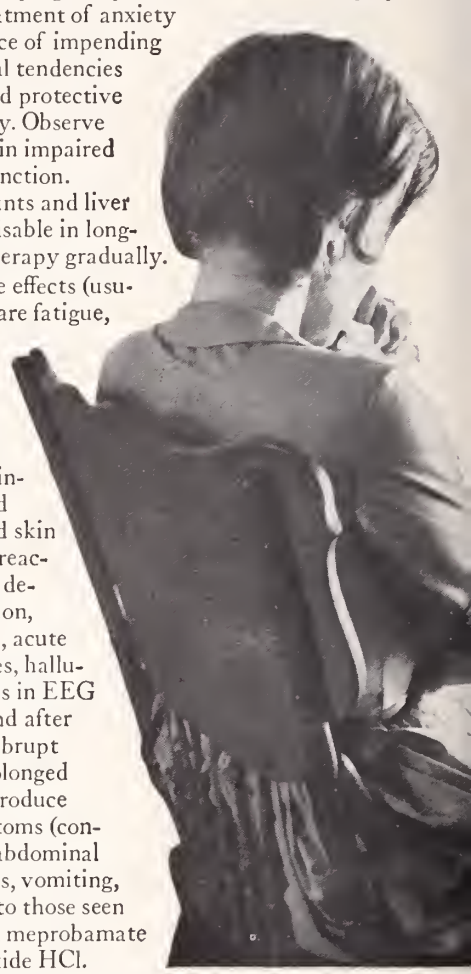
Before prescribing, please consult complete product information, a summary of which follows:

Contraindications: Infants, patients with history of convulsive disorders, glaucoma or known hypersensitivity to drug.

Warning: Not of value in the treatment of psychotic patients, and should not be employed in lieu of appropriate treatment.

Precautions: Limit dosage to smallest effective amount in elderly or debilitated patients (not more than 1 mg, one or two times daily initially) to preclude ataxia or oversedation, increasing gradually as needed or tolerated. As is true of all CNS-acting drugs, until correct maintenance dosage is established, advise patients against possibly hazardous procedures requiring complete mental alertness or physical coordination. Driving during therapy not recommended. In general, concurrent use with other psychotropic agents is not recommended. If such combination therapy is used, carefully consider individual pharmacologic effects–particularly with known compounds which may potentiate action of Valium (diazepam), such as phenothiazines, barbiturates, MAO inhibitors and other antidepressants. Advise patients against simultaneous ingestion of alcohol or other CNS depressants. Safe use in pregnancy not established. Employ usual precautions in treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Observe usual precautions in impaired renal or hepatic function. Periodic blood counts and liver function tests advisable in long-term use. Cease therapy gradually.





Side Effects: Side effects (usually dose-related) are fatigue, drowsiness and ataxia. Also reported: mild nausea, dizziness, blurred vision, diplopia, headache, incontinence, slurred speech, tremor and skin rash; paradoxical reactions (excitement, depression, stimulation, sleep disturbances, acute hyperexcited states, hallucinations); changes in EEG patterns during and after drug treatment. Abrupt cessation after prolonged overdosage may produce withdrawal symptoms (convulsions, tremor, abdominal and muscle cramps, vomiting, sweating) similar to those seen with barbiturates, meprobamate and chlordiazepoxide HCl.

Dosage: *Adults:* Mild to moderate psychoneurotic reactions, 2 to 5 mg b.i.d. or t.i.d.; severe psychoneurotic reactions, 5 to 10 mg t.i.d. or q.i.d.; alcoholism, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed; muscle spasm with cerebral palsy or athetosis, 2 to 10 mg t.i.d. or q.i.d. *Geriatric patients:* 1 or 2 mg/day initially, increase gradually as needed and tolerated. (See Precautions.)

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